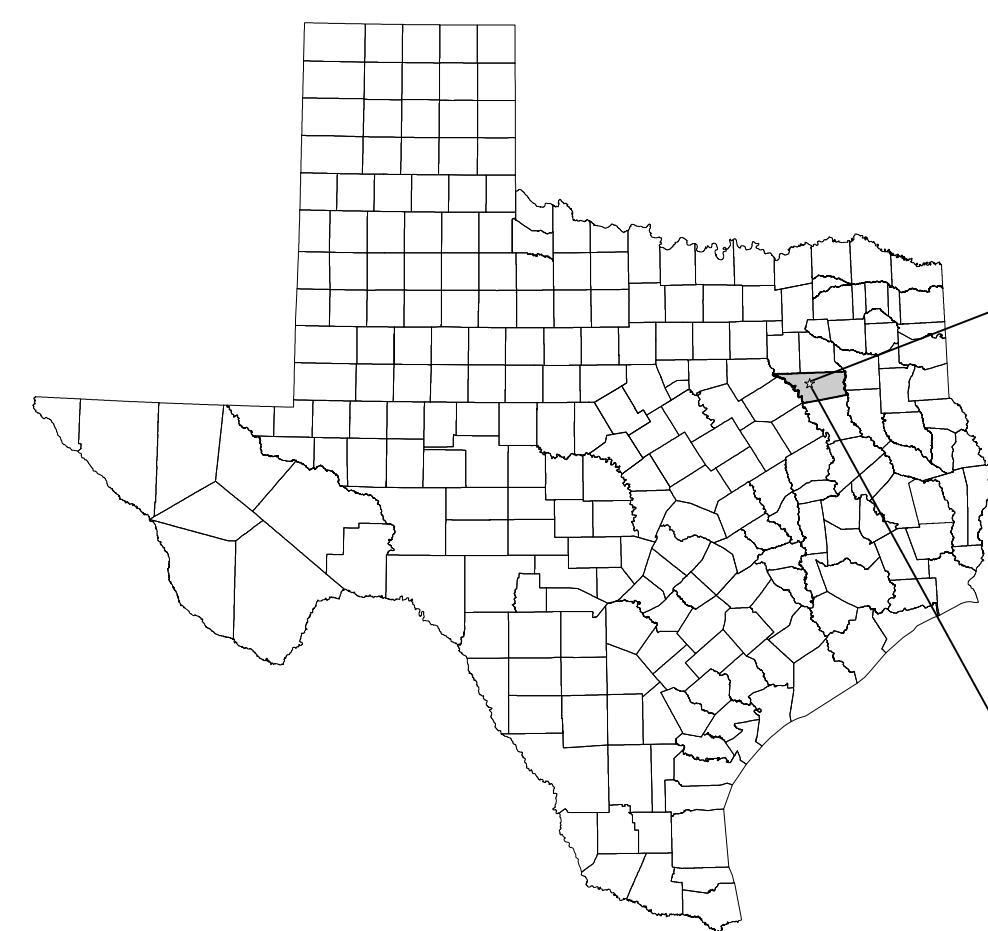
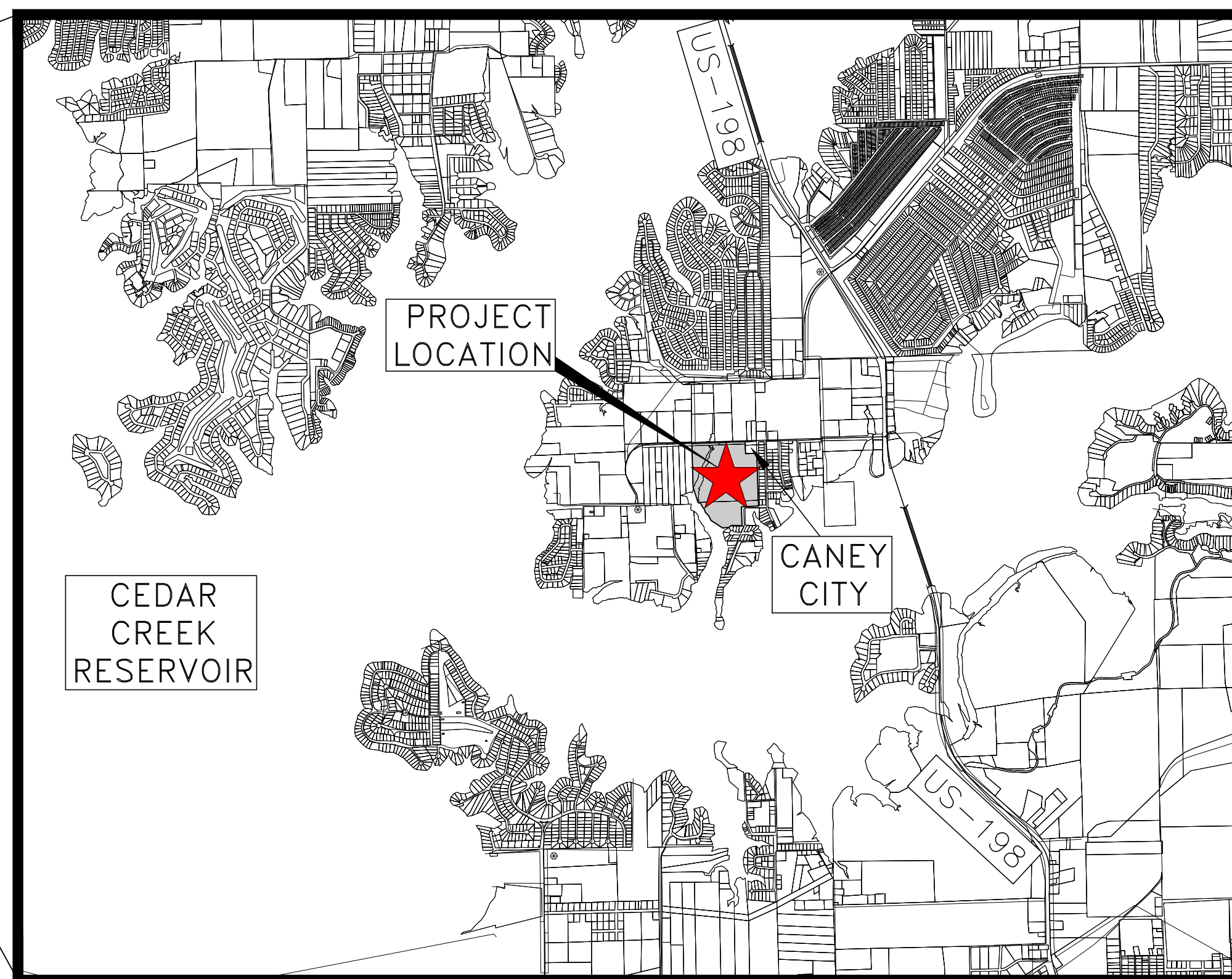


# PAVING, DRAINAGE, WATER & SANITARY SEWER CONSTRUCTION PLANS FOR LEO'S LANDING 821 INVESTMENTS, LLC. CANEY CITY, TEXAS FEBRUARY 2023



**MAYOR**  
TRAVIS LAMAR MATTHEWS, JR.

**CITY COUNCIL**  
HEATHER DUNTON  
STEVE PINE  
LANCE PECK  
JEFF MEISTER



VICINITY MAP

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.

CIVIL SHEET INDEX	
SHEET NO.	DESCRIPTION
SHEET C-1.00	TITLE SHEET
SHEET C-1.01	GENERAL NOTES
SHEET C-2.00	TOPOGRAPHIC SURVEY
SHEET C-2.01	SURVEY PLAT
SHEET C-3.00	OVERALL SITE PLAN
SHEET C-4.00	OVERALL GRADING PLAN
SHEET C-5.00	OVERALL WATER SEWER MAP
SHEET C-6.00	DRAINAGE AREA MAP
SHEET C-6.01	DRAINAGE CALCULATIONS
SHEET C-6.02	STORM SEWER PLAN AND PROFILES
SHEET C-7.00	STORM WATER POLLUTION PREVENTION PLAN
SHEET C-8.00	WALL PLAN & DETAILS
SHEET C-9.00	LED DRIVE PLAN AND PROFILE
SHEET C-9.10	LAGNIAPPE COURT PLAN AND PROFILE
SHEET C-9.20	PRITCHARD WAY PLAN AND PROFILE
SHEET C-9.21	PRITCHARD WAY PLAN AND PROFILE
SHEET C-9.30	MERCER LANE PLAN AND PROFILE
SHEET C-9.31	MERCER LANE PLAN AND PROFILE
SHEET C-9.40	LEIF CAHILL WAY PLAN AND PROFILE
SHEET C-9.41	LEIF CAHILL WAY PLAN AND PROFILE
SHEET C-9.42	LEIF CAHILL WAY PLAN AND PROFILE
SHEET C-9.50	BOEHM PLACE PLAN AND PROFILE
SHEET C-9.51	BOEHM PLACE PLAN AND PROFILE
SHEET C-9.60	BYRD COURT PLAN AND PROFILE
SHEET C-9.70	ZAAL CIRCLE PLAN AND PROFILE
SHEET C-9.71	ZAAL CIRCLE PLAN AND PROFILE
STANDARD DETAILS	
SHEET C-10.00	STANDARD COMMERCIAL PAVING DETAILS
SHEET C-10.01	STANDARD CURB INLET DETAILS
SHEET C-10.02	STANDARD WATER DETAILS
SHEET C-10.03	STANDARD SANITARY SEWER DETAILS
SHEET C-10.04	STANDARD EROSION CONTROL DETAILS (EC1)

REA S. BOUDREAUX, P.E.  
THE C.T. BRANNON CORPORATION

RICHARD L. BAKER, P.E.  
THE C.T. BRANNON CORPORATION

February 24, 2023  
DATE

DESIGNED BY: RLB  
DATE: JANUARY 2023

1321 SOUTH BROADWAY  
HOUSTON, TEXAS 77003  
597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
LICENSE REGISTRATION #F-262  
WWW.BRANNONCORP.COM

CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

ISSUED FOR:  
PRELIMINARY  
FOR  
REVIEW ONLY

PROJECT NO.  
22104  
SHEET NO.  
**C-1.00**

TITLE SHEET

22104-01-0-Title.dwg

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GENERAL NOTES AND SPECIFICATIONS

1. STANDARD SPECIFICATIONS: The standard specifications for the City are the Texas Department of Transportation, 2014 Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, with revisions thereto on or prior to the date of advertisement are hereby made a part of this Contract by reference only, unless otherwise specified, and will be in such force and effect as if contained at length herein.

2. EROSION CONTROL: The Contractor shall sequence construction and proceed in a manner that will minimize erosion. The Contractor shall install and maintain erosion control mechanisms as shown on the plans or as directed by the Engineer. Erosion control mechanisms and pollution control mechanisms shall be installed according to the Storm Water Pollution Prevention Plan (SWPPP).

The cost of erosion control is the responsibility of the Contractor and is incidental to various bid items.

3. TOPSOIL: If indicated on the plans, the Contractor shall salvage the existing topsoil to a depth of 6-inches from within the limits of the project. The Contractor shall replace topsoil to compacted depth of 4-inches on all parkways, if indicated on the plans.

4. LANDSCAPING: The Contractor shall seed and fertilize all disturbed areas and parkways according to the SWPPP. The seeded areas shall be watered at such times and in the manner and quantity as directed by the Engineer. Watering is a non-pay item and shall be incidental to the seeding bid item.

5. SEEDING FOR EROSION CONTROL: The Contractor shall seed all disturbed areas according to the SWPPP. All areas designated for seeding shall be seeded by the Contractor at an application rate of 1.5 LB per 1,000 SF. The analysis of the seed shall be based on the following:

Table with 4 columns: APPLICATION DATE, RYE, UNHULLED BERBERMUDA, HULLED BERBERMUDA. Rows show percentages for dates from Before April 1 to Oct. 1 to April 1.

The seeded areas shall be watered at such times and in the manner and quantity as directed by the Engineer. Watering is a non-pay item and shall be incidental to the seeding bid item. Seeded areas will be required to have 70% cover with grass before payment will be made for seeding and fertilizing.

6. FERTILIZER: Fertilizer shall have an analysis of 15-5-10 or as approved by the Engineer and shall be applied at the rate of 15 LBS. per 1,000 SF where sod and/or seed is to be placed.

7. SELECT FILL (BORROW): Select Fill (Borrow) material shall be Item 132, Type "C" with the following requirements:

Table with 2 columns: Requirement, Value. Rows include liquid limit, plasticity index, CBR, and Percent Passing.

8. BACKFILL: Excavation and backfill for storm sewer, water lines, sanitary sewer lines, utility headers, toe ditches, and driveways shall be incidental to various bid items.

9. SELECT BACKFILL FOR STORM SEWER: Select backfill for storm sewer will be required when the existing material excavated is unsuitable for backfill. Material made unsuitable by the Contractor's action shall be replaced with select backfill at the Contractor's expense.

10. BACKFILLING: That portion of backfill which will not support any portion of completed roadbed or embankment shall be placed in layers of not more than 10 inches in depth (loose measurement). That portion of the backfill which will support any portion of the roadbed or embankment shall be placed in uniform layers not to exceed 8 inches in depth (loose measurement). Compact each layer to meet the density requirements of the road bed, retaining wall, embankment material, or as shown on the plans, in accordance with the standard specifications. Refer to Item 400 3.3.1 "Backfill", p. 408. Each layer of backfill shall be compacted to a density of 95% of standard proctor (ASTM D 698) at optimum moisture, or as shown on the plans. The cost of the structures includes the cost of any backfill necessarily used to set the structures, even if the Contractor is required to bring select material from offsite to use as backfill.

11. SUBGRADE PREPARATION FOR PAVED AREAS: The subgrade shall be prepared by "working" the existing material to a depth of 12 inches below bottom of base. "Working" shall include removing, discing, mixing, blending and drying the material, then replacing and recompacting the material - or any other method accepted by the Engineer. The top 6 inches of subgrade will be compacted to a density of 95% of standard proctor at optimum moisture ±2%, as shown on the standard paving detail sheet.

12. PROOF-ROLLING FOR PAVED AREAS: The top 12 inches of subbase and subgrade shall pass a test of "proof-rolling" by the Contractor using a loaded scraper or loaded dump truck, or as approved by the Engineer, before density tests are performed.

13. UNDERCUT FOR PAVED AREAS: Undercut shall be used at the Engineer's discretion. The exact limits of the undercut area will be determined by the Engineer. Engineering fabric will be used in all undercuts. Some undercut areas may be relatively small so as to require excavation with a backhoe.

14. DRAINAGE STRUCTURES SUBGRADE: The Contractor is responsible for preparing the subgrade and making a suitable bottom for installing storm sewer and drainage structures. No extra pay will be allowed for undercutting. However, if installation is approved by the Engineer, payment will be made to the limits shown for installing crushed stone embedment.

15. CRUSHED STONE BEDDING (for Storm Sewer): While the unit price of crushed stone bedding has been listed in the bid proposal, and the quantity of crushed stone bedding to be used has been estimated, it is intended that crushed stone bedding be used only as directed by the Engineer in the field, or as required by plans. The Contractor shall install the bedding within limits as determined by the Engineer and within the time allowed by the Engineer. The Contractor shall be paid only for crushed stone bedding authorized by the Engineer. The bid price for crushed stone bedding shall include the aggregate and excavation.

Crushed stone bedding shall be washed coarse aggregate with the following sieve analysis:

Table with 2 columns: STANDARD CRUSHED ROCK - AGGREGATE GRADE 4: PERCENT, RETAINED ON various sieve sizes (1-1/2", 1", 1/2", #4, #8).

16. GEOTEXTILE ENGINEERING FABRIC (NON-WOVEN): While a unit price and an estimated quantity of geotextile engineering fabric is included in the bid proposal, it is intended that this material be used only as determined necessary by the Engineer. The fabric shall be high tenacity, woven polypropylene yarn geotextile engineering fabric designated as Mirafi FW404 (weight=8.8 oz. per square yard) or equivalent. The owner shall pay for only the quantity approved by the Engineer.

17. HOT MIX ASPHALTIC CONCRETE: For Type "D" surface material, the asphaltic material shall form from 5 to 8 percent of the mixture by weight. For Type "B" base material, the asphaltic material shall form from 3.5 to 7 percent of the mixture by weight. For both surface and base material, the asphaltic content used shall be that percent required to obtain optimum density. This percent asphalt shall be obtained from a mix design performed according to Texas State Department of Highways and Public Transportation 2014 Standard Specifications. The mix design for base and surface material shall be the City of Tyler's mix design, submitted to the Engineer for review, and approved by the Engineer. The actual asphaltic material contained in the delivered mix shall be within a +/-0.50% tolerance of the content specified in the mix design.

The HMAC shall be installed at an application rate of 110/LBS/SY/IN of depth for both Type "D" and Type "B". At the seams where the new HMAC meets the existing HMAC, concrete headers or valley gutters, or curb and gutter, a tack coat (RC-250) shall be applied to the seams at a rate of 0.05 Gal./SY.

When installing Type "D" HMAC on Type "B" base, a tack coat (RC-250) shall be applied on the base if the base has been in place for over 3 days, or if required by the Engineer. The tack coat shall be applied at a rate not to exceed 0.05 Gal./SY and rolled with a pneumatic roller. When installing Type "D" on a flexible base, or when installing Type "B" HMAC on subgrade, a prime coat (MC-30 or AE-P (EP1R or equal)) shall be applied at a rate of 0.30 Gal./SY to the base material or subgrade material. The furnishing and application of a tack coat and/or prime is subsidiary to other bid items.

The Type "D" and Type "B" HMAC will be installed with an approved HMAC laying machine, unless otherwise approved by the Engineer. A motor grader is not approved to install HMAC.

Laydown operations shall be conducted in such sequence that vehicles transporting asphaltic concrete material to this project will not travel over the completed pavement until said pavement shall have been in place for a minimum of twenty-four hours unless otherwise directed by the Engineer.

Joints shall be staggered so that they fall at least 12 inches from the previous joint.

Storage of the completed mix upon the ground will not be permitted at the mixing plant or the job site. Any mix that comes into contact with earth or other objectionable foreign matter shall be rejected.

18. HOT MIX ASPHALTIC CONCRETE ACCEPTANCE SAMPLING AND TESTING: Hot mix asphaltic concrete will be accepted for density and depth on a lot basis. A lot will consist of one day's production or 600 tons, whichever is less, and shall be divided into four equal sublots. One test shall be made for each sublot.

Each lot of pavement will be accepted, with respect to density, when the average field density is equal to or greater than 91.50 percent of the average maximum theoretical density as determined in accordance with ASTM D2041, and when no individual determination is less than 86.0 percent of the average maximum theoretical density. Four field density determinations will be made for each lot. Cores or sawed samples taken from the pavement will be used to determine the field density. The density of the cores or sawed samples shall be determined in accordance with ASTM D2726.

The specimen used to determine the average maximum theoretical density for a lot may be sampled by any one of the following four methods:

- 1.) A sample may be removed from the truck delivering the HMAC for the lot being tested.
2.) A sample may be removed from the HMAC laying machine placing the lot being tested.
3.) A sample may be created by combining the material from the four individual core samples used for field densities.
4.) A sample may be created from each individual core sample used for field densities, with the results being averaged.

Specimens used for field density determinations shall be carefully crumbled, using heat if necessary, if heating is necessary, the specimen shall be heated to the lowest temperature required for proper preparation of the sample.

The use of nuclear field density determinations shall not be used as the basis for acceptance with respect to density.

Each lot of pavement will be accepted, with respect to depth, when the average field depth deficiency is equal to or less than 0.25 inches for base courses and equal to or less than 0.13 inches for surface courses, and when no individual determination is deficient more than 1.00 inch for base courses and more than 0.50 inch for surface courses. Four field depth determinations will be made for each lot. Cores of sawed samples taken from the pavement will be used to determine the actual field depth.

19. PIPE UNDERDRAIN: While the unit price of pipe underdrain has been listed in the bid proposal and the quantities of pipe to be used has been estimated, it is intended that pipe underdrain be used only as directed by the Engineer in the field. The Contractor shall install the underdrain within limits as determined by the Engineer and within the time allowed by the Engineer. The Contractor shall be paid only for pipe underdrain authorized by the Engineer. The bid price for underdrain shall include the pipe, aggregate, engineering fabric, excavation and backfill. The backfill for the standard depth underdrain shall be made in two lifts, and three lifts for the extra depth.

Connecting the proposed underdrain into an existing junction box, an existing storm sewer, or an existing box culvert, will not be paid for directly, but shall be considered subsidiary to this bid item. The Contractor shall use an epoxy grout to make repairs at all ties.

Underdrain will be installed according to the standard detail sheet.

20. GROUNDWATER AND SUBGRADE: If groundwater is encountered during construction, sufficient underdrains to collect groundwater will be required by the City Engineer. If unacceptable subgrade material is encountered, the material will be removed and replaced with select material as directed by the City Engineer.

21. LIME TREATMENT OR LIME/FLYASH TREATMENT OF SUBGRADE: The subgrade material shall be treated in place to the depths indicated on the typical roadway sections and at the herein prescribed rate. The subgrade material shall be treated in place with hydrated lime (Type "A") by slurry placement to achieve a 6 percent lime mixture based on 95 percent of maximum density (dry density basis) of subgrade according to ASTM D698. The subgrade material shall then be recompacted to 95 percent of Standard Proctor Density (ASTM D698) at optimum moisture -1% to +3%. The percentage of lime is subject to change depending upon the results obtained from laboratory lime series run upon the actual subgrade material. Trublend or Stabilmix, or CEMENT may also be used, when approved by the Engineer. All applications of lime, lime/flyash, or cement shall be in strict compliance with TxDOT Specification Item 260, Item 265, or Item 275.

22. FLEXIBLE BASE: The flexible base material shall be compacted to a density of 95 percent modified proctor (ASTM D1557) at optimum moisture. The flexible base material shall have a minimum CBR of 60%, unless shown otherwise.

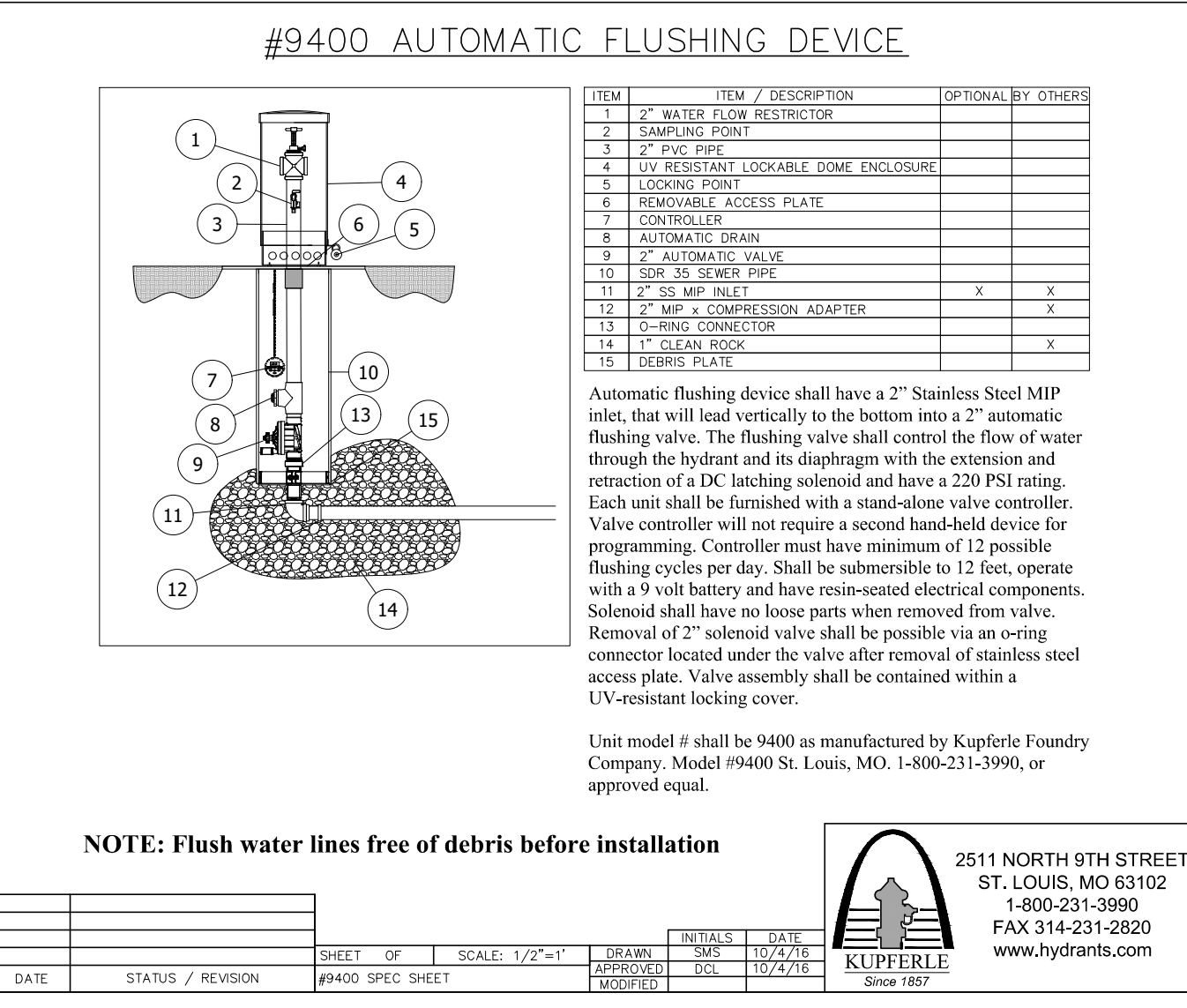
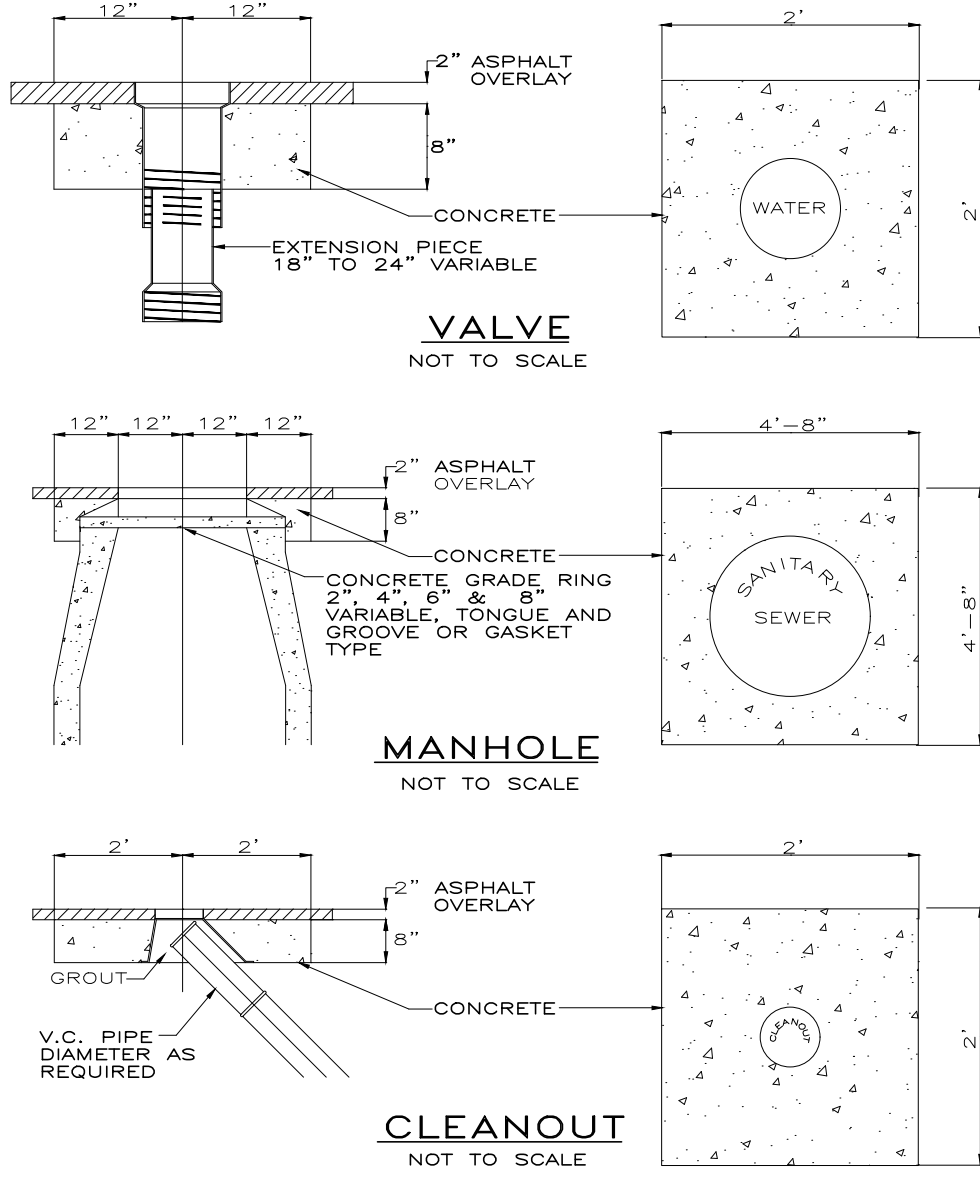
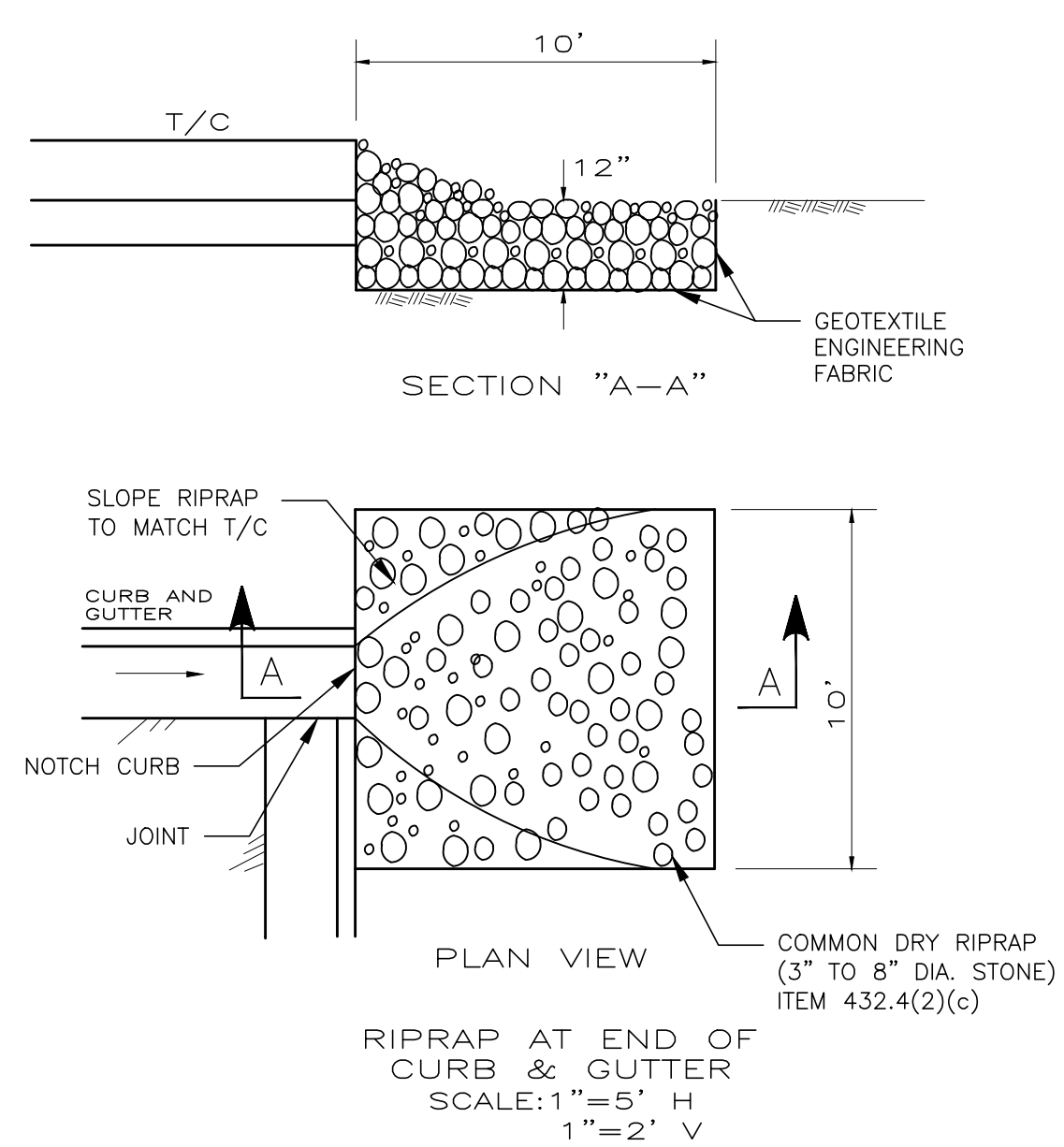
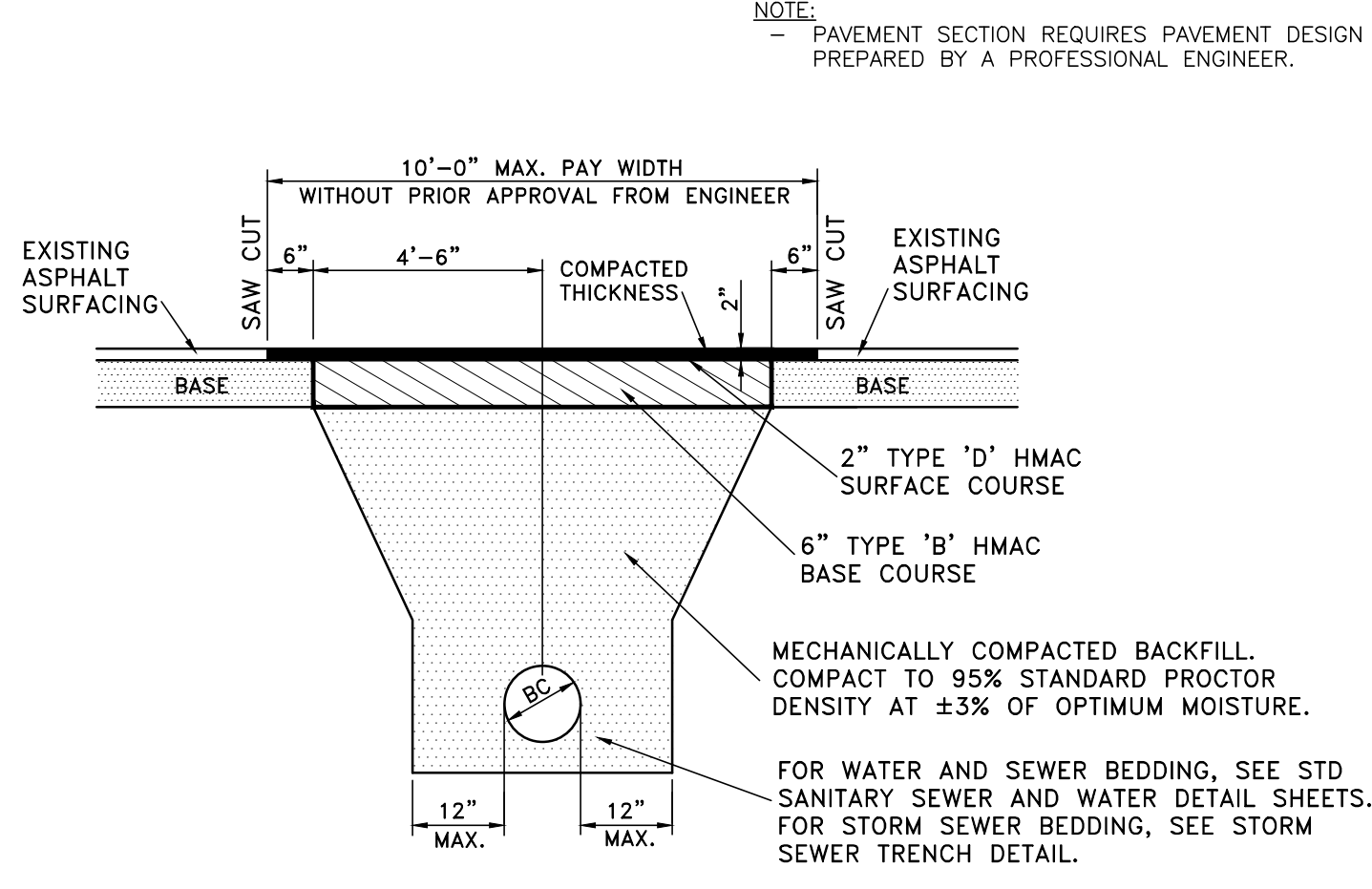
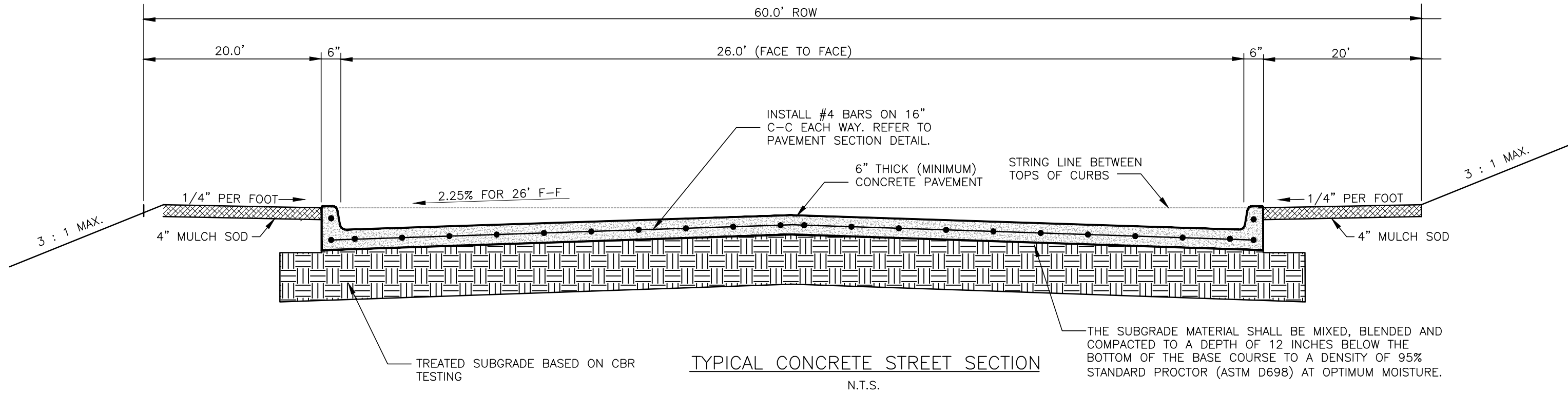
23. Storm sewer pipe 8" or smaller may be PVC SDR 26, or ADS N-12 HDPE. Storm sewer pipe larger than 8", but smaller than 24", may be PVC SDR26; ADS N-12 HP, or RCP Class III. All pipe 24" and larger shall be ads N-12 HP, or RCP Class III unless otherwise noted. All storm sewer shall be installed with crushed stone embedment.

All storm sewer trenches to be backfilled with select backfill. Native material to be removed if it does not meet select backfill requirements.

All catch basins, junction boxes, and curb inlets may be "park" precast concrete or Nyloplast structures or approved equal. Contact Cody Simmons 903-720-4852 for Nyloplast information.

All inlet tops and junction box lids shall be cast-in-place. Junction boxes shall have adjustable risers, rings and covers.

Catch basins in grass areas shall have standard grates. Catch basins or trench grates in pedestrian areas shall have ADA rated grates. Catch basins in pavement shall have traffic rated grates. Concrete aprons for catch basins are not required unless shown or noted below.



NOTE: THE EXCAVATION AREA IS TO BE MECHANICALLY TAMPED. NOTE: ALL CONCRETE IS TO BE CLASS A.

TYPICAL ADJUSTMENTS TO FINISHED PAVEMENT GRADE FOR CLEANOUT, MANHOLE & VALVE COVER

GENERAL NOTES

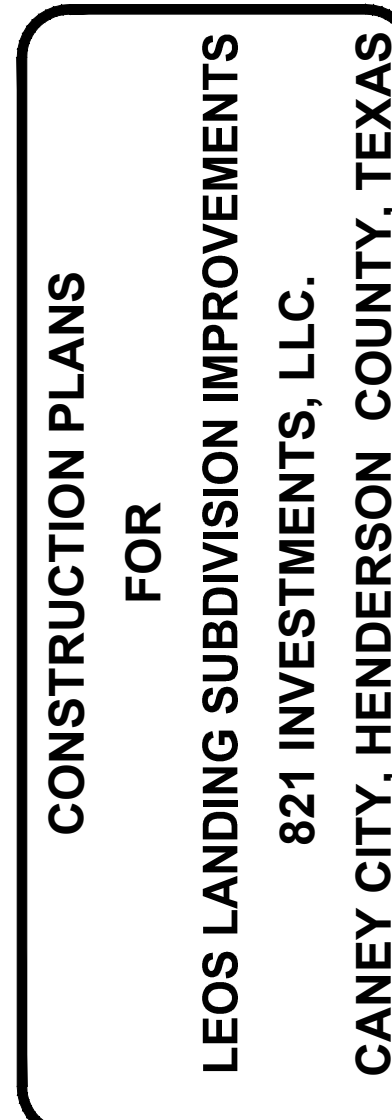
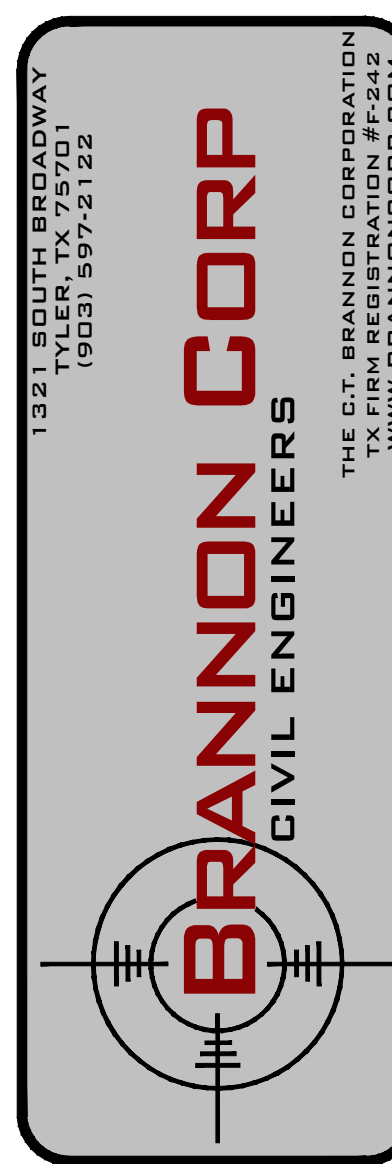


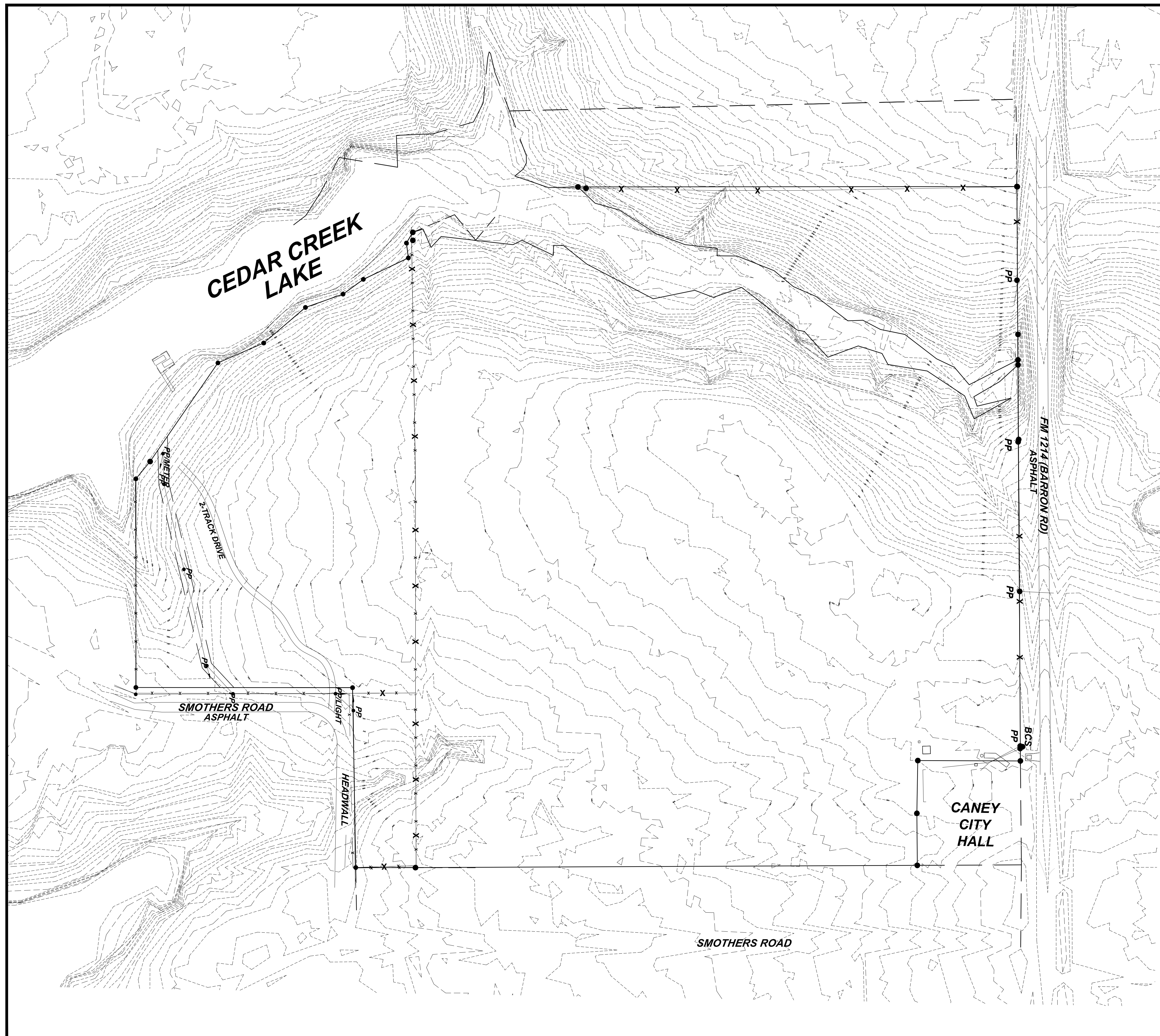
Table with columns: REVISIONS, REMARKS, NO., DATE.

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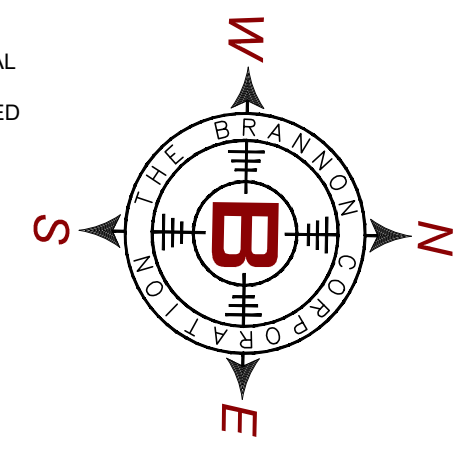
PROJECT NO. 22104 SHEET NO.

C-1.01

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NOTE:  
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EXISTING SITE SURVEY PROVIDED BY:  
**HARDIN SURVEYING**  
PO BOX 587  
MABANK, TEXAS 75147  
(903) 887-5674  
FIRM# 10114700

DATE PERFORMED: APRIL 25, 2022  
SCALE: 1"=100' FEET  
PROJECT: 22104-02-00  
DRAWN BY: TP  
CHECKED BY: CS  
THE SURVEY WAS PERFORMED FOR:  
E21 INVESTMENTS, LLC

DESIGNED BY: RLB  
DATE: JANUARY 2023  
**PRELIMINARY**  
02/24/2023

1321 SOUTH BROADWAY  
TYLER, TX 75701  
(903) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

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TX FIRM REGISTRATION #F-242  
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CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

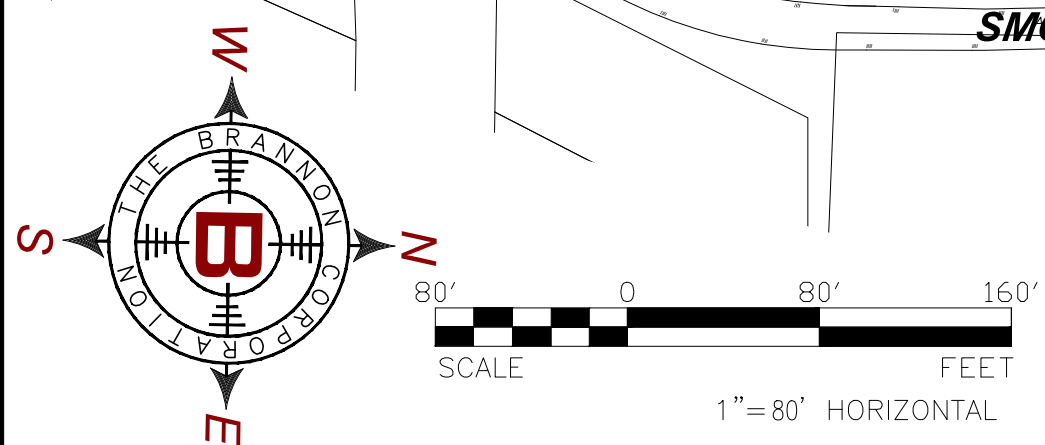
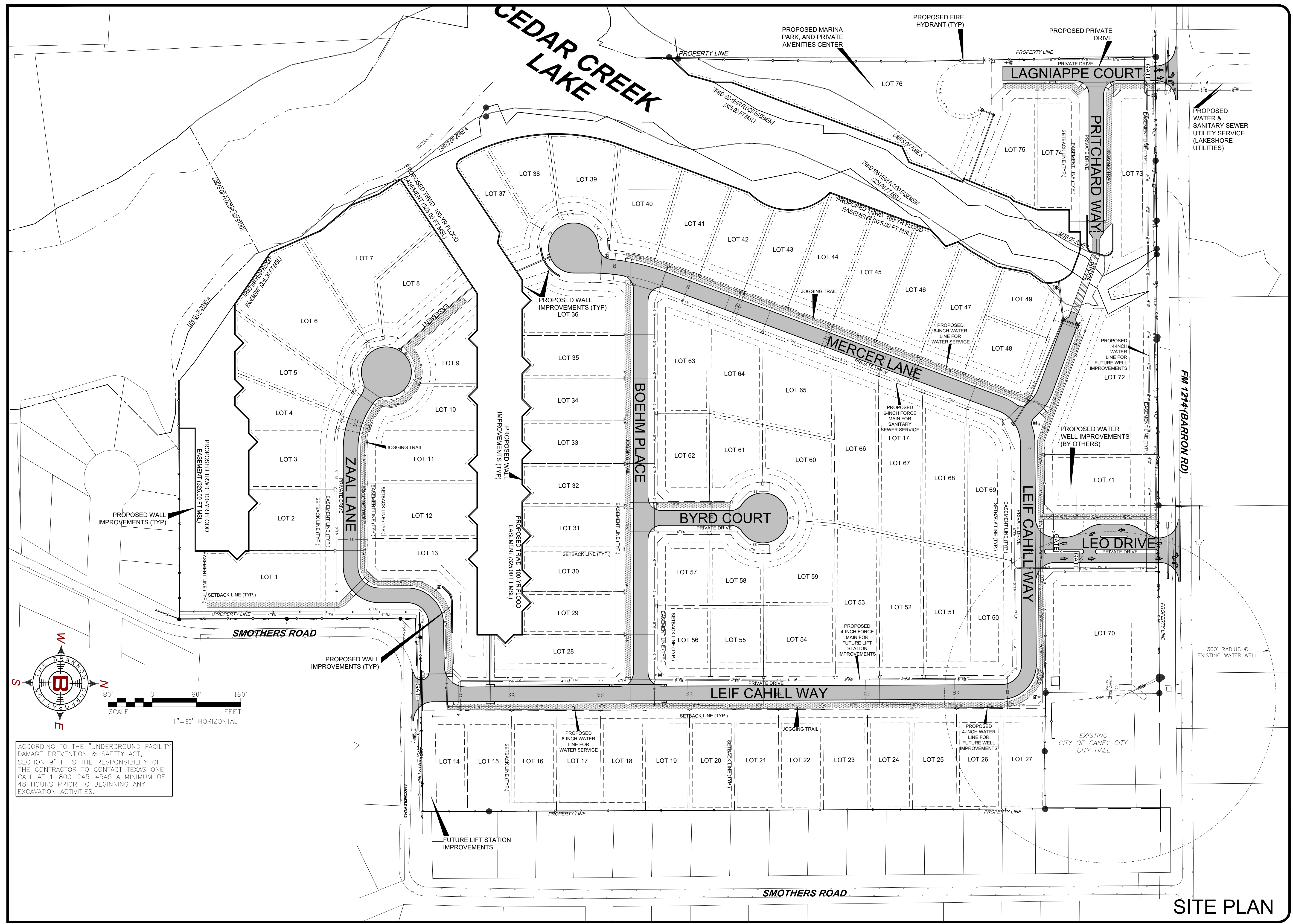
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SHEET NO.  
**C-2.00**

TOPOGRAPHIC SURVEY

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DESIGNED BY: RLB  
 DATE: JANUARY 2023

PRELIMINARY  
 02/24/2023

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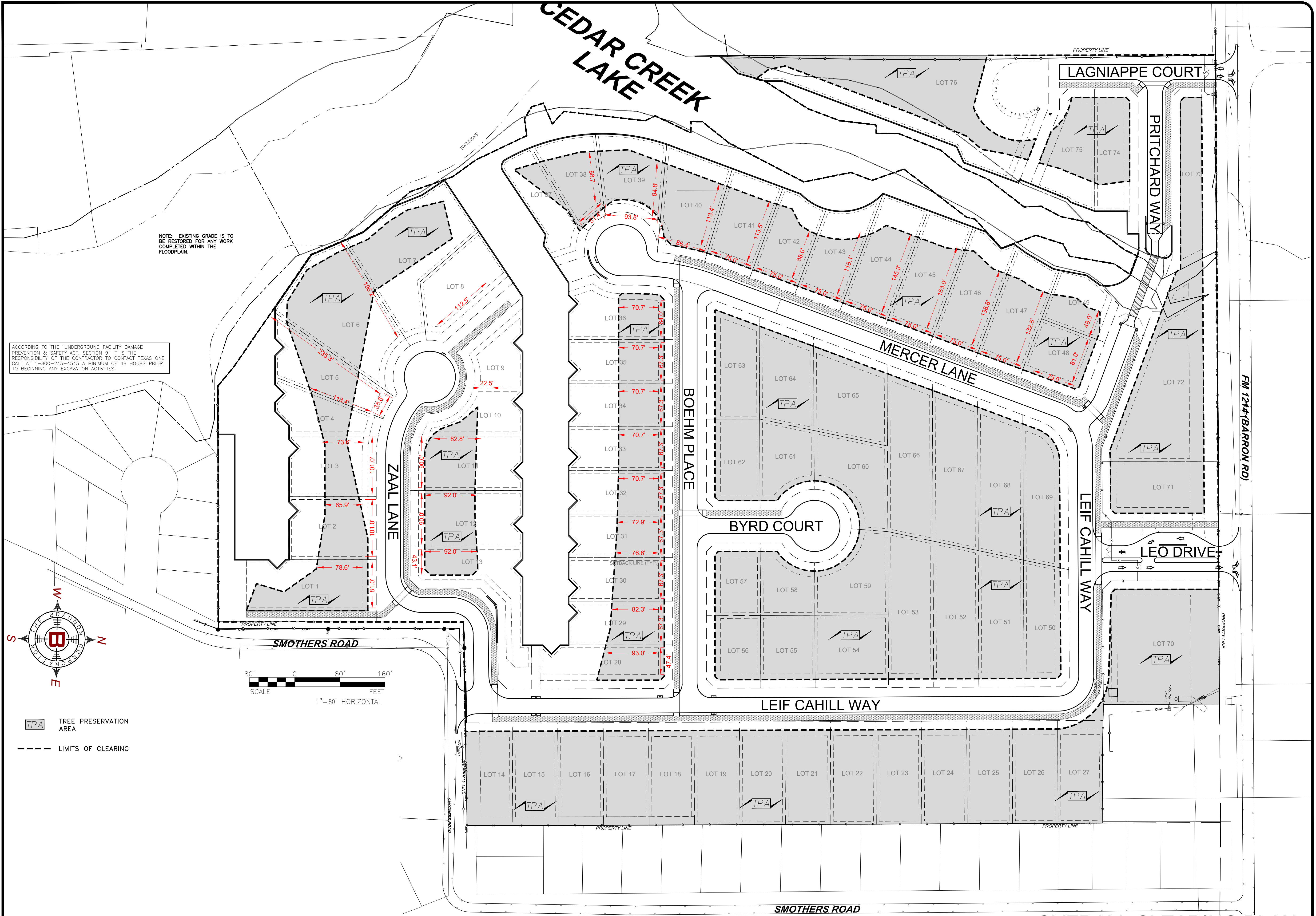
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 FOR  
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PROJECT NO. 22104  
 SHEET NO.  
**C-3.00**

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22104-03-00-Site Plan.dwg

**SITE PLAN**



NOTE: EXISTING GRADE IS TO BE RESTORED FOR ANY WORK COMPLETED WITHIN THE FLOODPLAIN.

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.

**TPA** TREE PRESERVATION AREA  
 --- LIMITS OF CLEARING

SCALE  
 0 80' 160'  
 FEET  
 1" = 80' HORIZONTAL

DESIGNED BY: RLB  
 DATE: JANUARY 2023

1321 SOUTH BROADWAY  
 TYLER, TX 75701  
 (903) 597-2122

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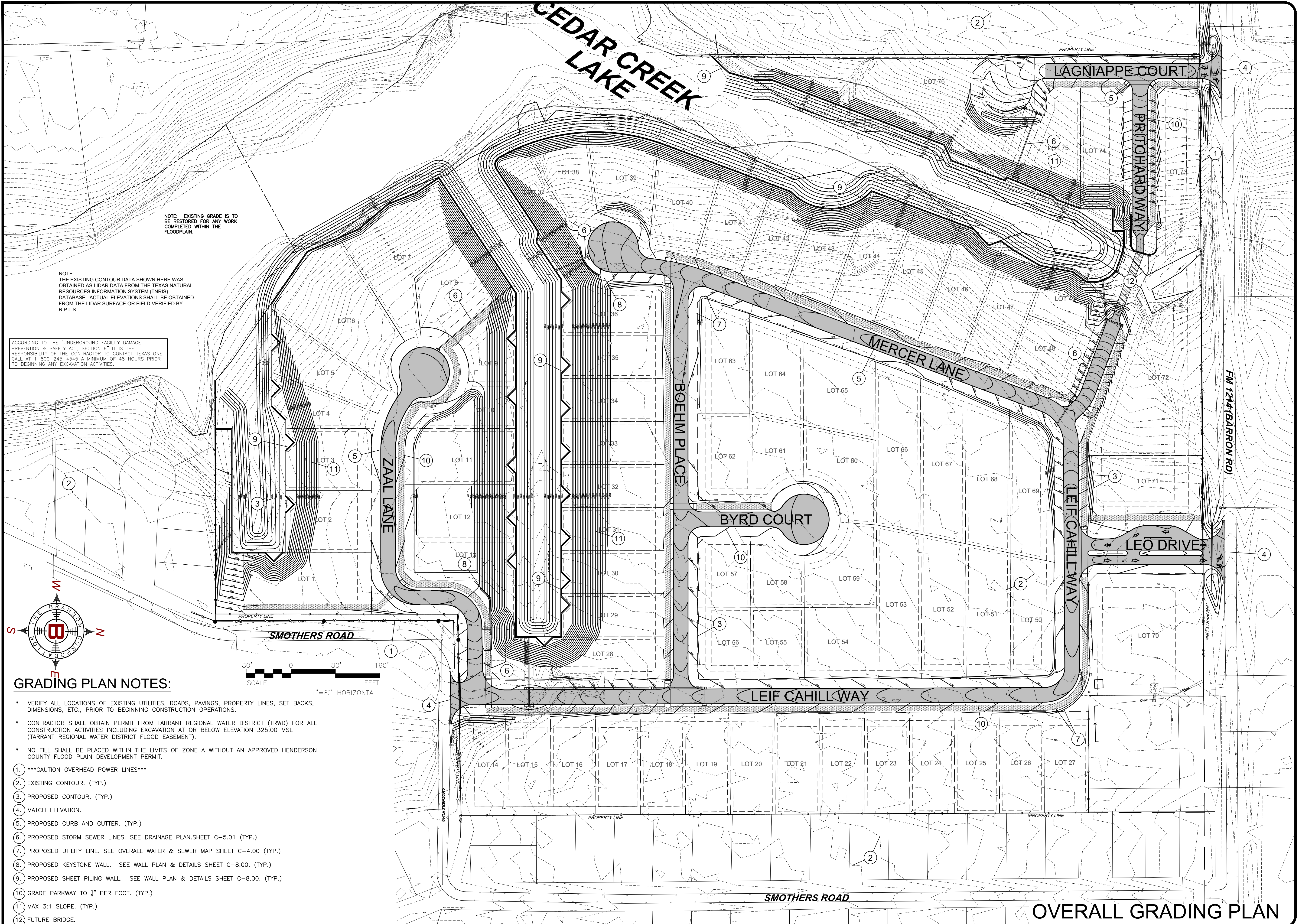
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PROJECT NO. 22104  
 SHEET NO. **C-3.01**

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OVERALL CLEARING PLAN



NOTE: EXISTING GRADE IS TO BE RESTORED FOR ANY WORK COMPLETED WITHIN THE FLOODPLAIN.

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**GRADING PLAN NOTES:**

- \* VERIFY ALL LOCATIONS OF EXISTING UTILITIES, ROADS, PAVINGS, PROPERTY LINES, SET BACKS, DIMENSIONS, ETC., PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
- \* CONTRACTOR SHALL OBTAIN PERMIT FROM TARRANT REGIONAL WATER DISTRICT (TRWD) FOR ALL CONSTRUCTION ACTIVITIES INCLUDING EXCAVATION AT OR BELOW ELEVATION 325.00 MSL (TARRANT REGIONAL WATER DISTRICT EASEMENT).
- \* NO FILL SHALL BE PLACED WITHIN THE LIMITS OF ZONE A WITHOUT AN APPROVED HENDERSON COUNTY FLOOD PLAN DEVELOPMENT PERMIT.

1. \*\*\*CAUTION OVERHEAD POWER LINES\*\*\*
2. EXISTING CONTOUR. (TYP.)
3. PROPOSED CONTOUR. (TYP.)
4. MATCH ELEVATION.
5. PROPOSED CURB AND GUTTER. (TYP.)
6. PROPOSED STORM SEWER LINES. SEE DRAINAGE PLAN SHEET C-5.01 (TYP.)
7. PROPOSED UTILITY LINE. SEE OVERALL WATER & SEWER MAP SHEET C-4.00 (TYP.)
8. PROPOSED KEYSTONE WALL. SEE WALL PLAN & DETAILS SHEET C-8.00. (TYP.)
9. PROPOSED SHEET PILING WALL. SEE WALL PLAN & DETAILS SHEET C-8.00. (TYP.)
10. GRADE PARKWAY TO 1/4" PER FOOT. (TYP.)
11. MAX 3:1 SLOPE. (TYP.)
12. FUTURE BRIDGE.

DESIGNED BY: RLB  
DATE: JANUARY 2023



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TYLER, TX 75701  
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TX FIRM REGISTRATION #F-242  
WWW.BRANNONCORP.COM

CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

ISSUED FOR:  
PRELIMINARY  
FOR  
REVIEW ONLY

PROJECT NO. 22104  
SHEET NO. **C-4.00**

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22104-04-0-Grading Plan.dwg

**UTILITY PLAN NOTES:**

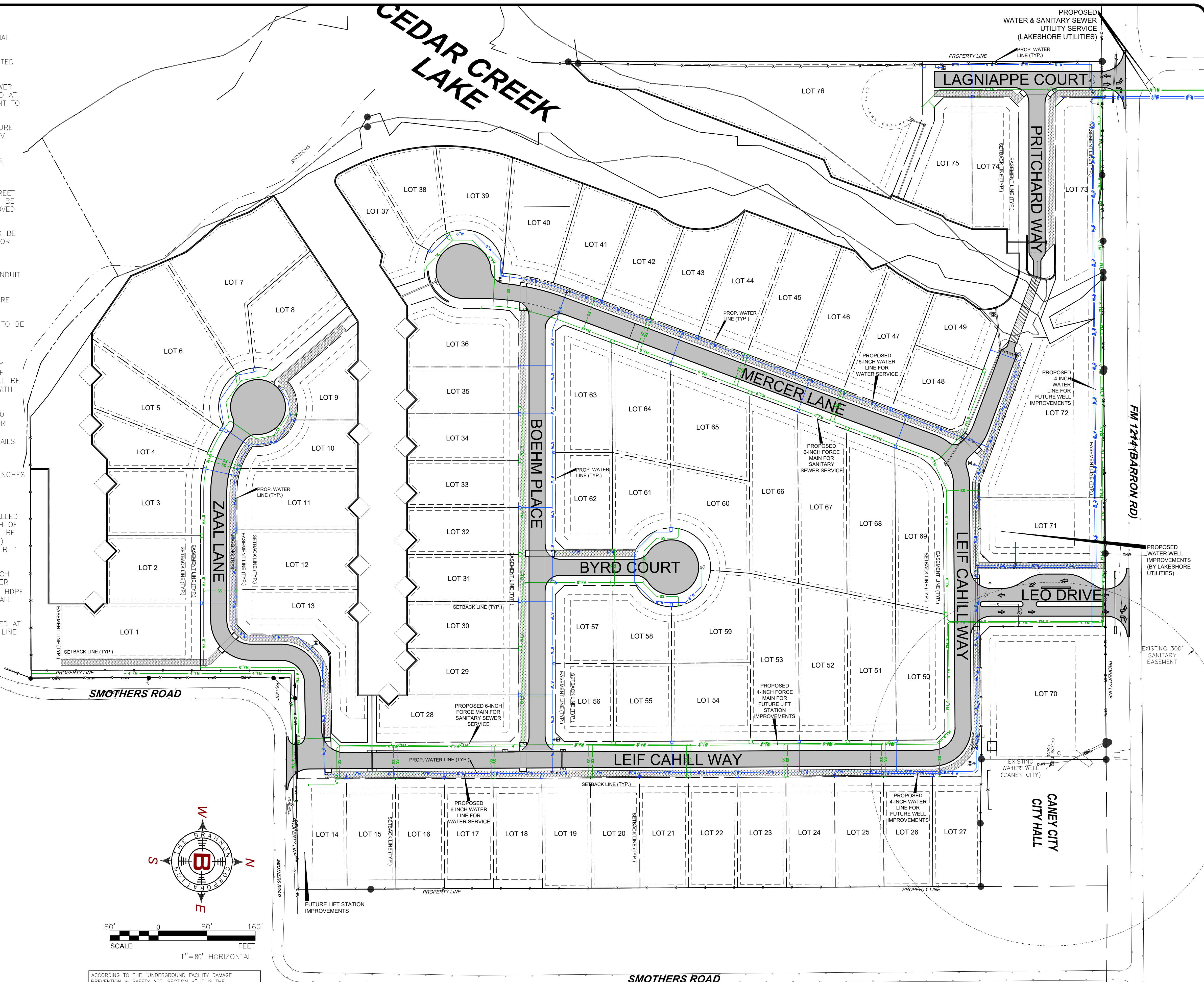
- \* SEE PLAN AND PROFILE SHEETS FOR ADDITIONAL UTILITY NOTES.
- \* COORDINATE WITH LAKESHORE UTILITIES AS NOTED (903-675-5619).
- \* ALL WATER, SANITARY SEWER, AND STORM SEWER ARE TO BE TERMINATED, CAPPED, AND MARKED AT PROPERTY LINE. ALL WORK BEYOND THAT POINT TO BE DONE BY PLUMBER.
- \* REFER TO FRANCHISE UTILITY PLANS FOR FUTURE LOCATIONS OF ELECTRIC, PHONE, AND/OR CATV.
- \* VERIFY ALL LOCATIONS OF EXISTING UTILITIES, ROADS, PAVINGS, PROPERTY LINES, SET BACKS, DIMENSIONS, ETC., PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
- \* ALL PRIVATE UTILITY WORK PERFORMED IN STREET RIGHT-OF-WAY AND UTILITY EASEMENTS, MUST BE PERFORMED BY A LAKESHORE UTILITIES APPROVED UTILITY CONTRACTOR.
- \* PROJECT UTILITY MATERIAL SUBMITTALS ARE TO BE PROVIDED TO UTILITY OWNER AND ENGINEER FOR REVIEW.
- \* WATER & SEWER MAINS (4-INCH OR LARGER) SHALL BE ENCASED IN SCHEDULE 40 PVC CONDUIT (115 PSI MIN.) AT ROAD CROSSINGS. EXTEND ENCASEMENT PIPE 9-FOOT BEYOND UTILITY CROSSING AND INSTALL WATERTIGHT SEAL WHERE APPLICABLE.
- \* MJ BENDS AND FITTINGS ARE NOT PERMITTED TO BE INSTALLED UNDER ROADWAY WITHOUT PRIOR APPROVAL FROM UTILITY OWNER.

**WATER UTILITY IMPROVEMENTS**

- \* DOMESTIC WATERLINES SHALL BE INSTALLED BY CONTRACTOR WITH A TYPICAL COVER DEPTH OF 36-INCHES. PIPE COLOR AND MATERIAL SHALL BE BLUE SDR-21 (CLASS 200) GASKETED PVC, WITH MJ FITTINGS AND SELECT BACKFILL.
- \* WATER SERVICES SHALL BE: 3/4-INCH PE4710 SDR-9 (250 PSI) HDPE MATERIAL WITH TRACER WIRE AND ANGLE CURB STOP (MUELLER OR APPROVED EQUAL). SEE STANDARD WATER DETAILS SHEET.
- \* 2-INCH AUTOMATIC FLUSHVALVE SHALL BE INSTALLED AT TERMINUS OF WATER LINES (4-INCHES OR LARGER)

**SANITARY SEWER UTILITY IMPROVEMENTS**

- \* SANITARY SEWER FORCEMAINS SHALL BE INSTALLED BY CONTRACTOR WITH A TYPICAL COVER DEPTH OF 42-INCHES. PIPE COLOR AND MATERIAL SHALL BE (SIZE AS NOTED) GREEN SDR-21 (CLASS 200) GASKETED PVC, WITH MJ FITTINGS AND CLASS B-1 BEDDING UNLESS NOTED OTHERWISE.
- \* SANITARY SEWER SERVICES SHALL BE: A 2-INCH TAP, WITH STRAIGHT CURB STOP, WITH REDUCER AND WITH 1 1/2-INCH PE4710 SDR-9 (250 PSI) HDPE SERVICE LINE ALSO WITH TRACER WIRE AND BALL VALVE AT SEWAGE BASIN.
- \* SANITARY SEWAGE BASINS ARE TO BE INSTALLED AT FRONT OF LOT ADJACENT TO R.O.W. AND LOT LINE WHEREVER POSSIBLE.



ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.

DESIGNED BY: RLB  
DATE: JANUARY 2023

1321 SOUTH BROADWAY  
DALLAS, TEXAS 75211  
(903) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
MINE REGISTRATION #FF-262  
LAW #BRANNON00000001

**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

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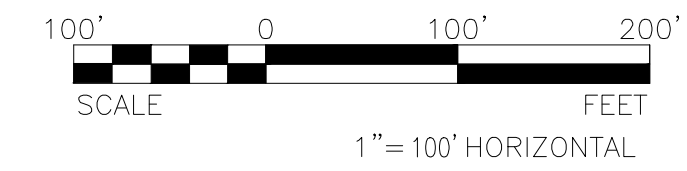
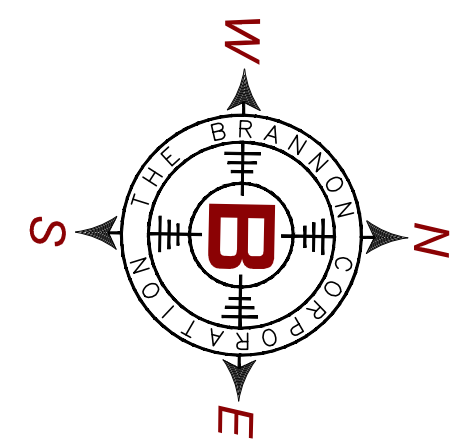
PROJECT NO. 22104  
SHEET NO. **C-5.00**

**OVERALL WATER & SEWER**

22104-05-Overall W&S.dwg

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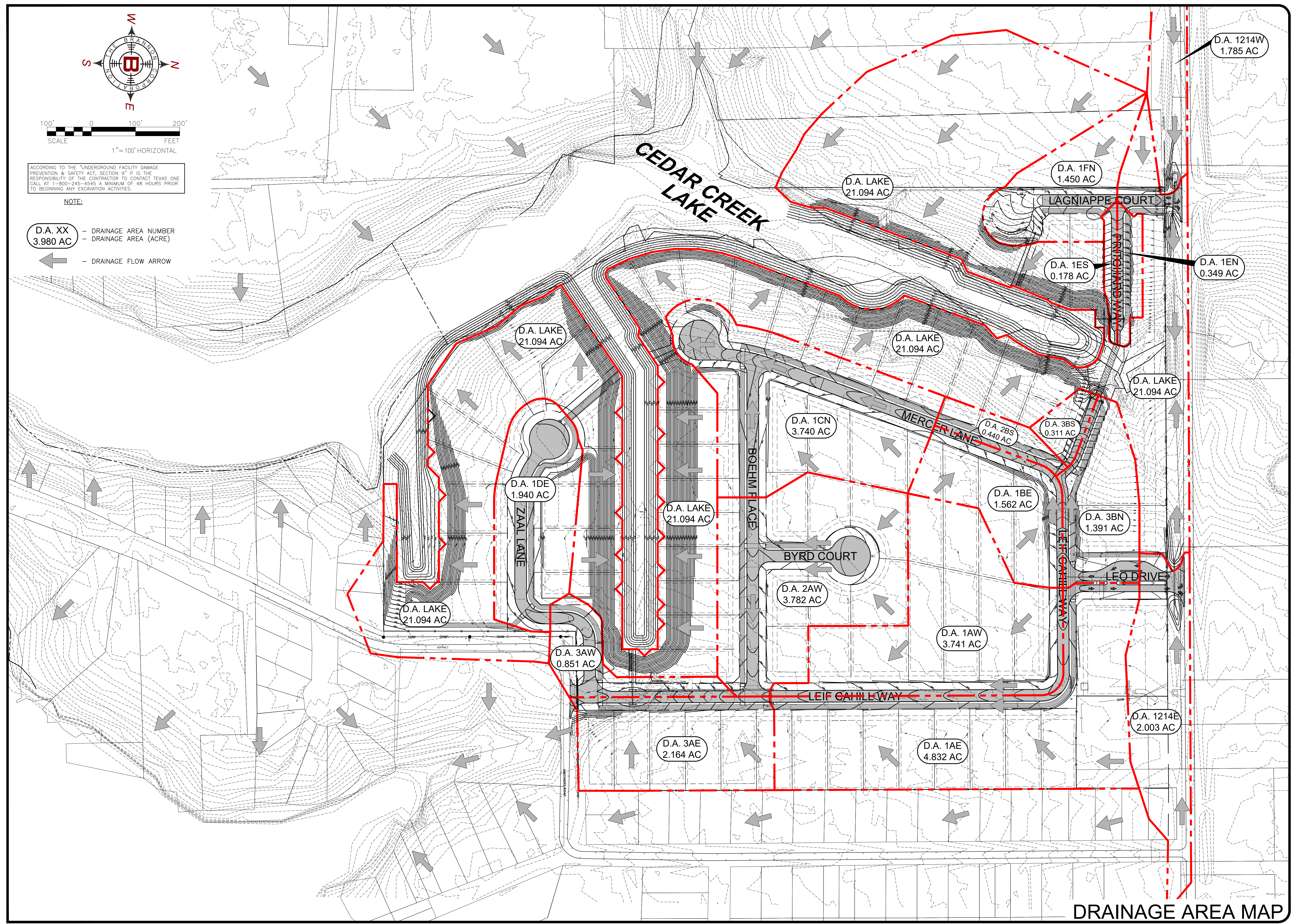




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NOTE:

- D.A. XX - DRAINAGE AREA NUMBER
- 3.980 AC - DRAINAGE AREA (ACRE)
- ← - DRAINAGE FLOW ARROW



DRAINAGE AREA MAP

DESIGNED BY: RLB  
DATE: JANUARY 2023



1321 SOUTH BROADWAY  
TYLER, TX 75701  
(903) 597-2122

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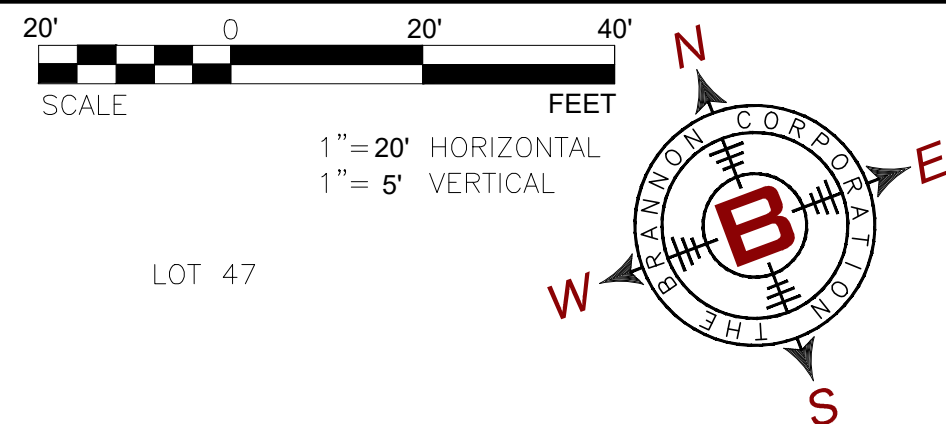
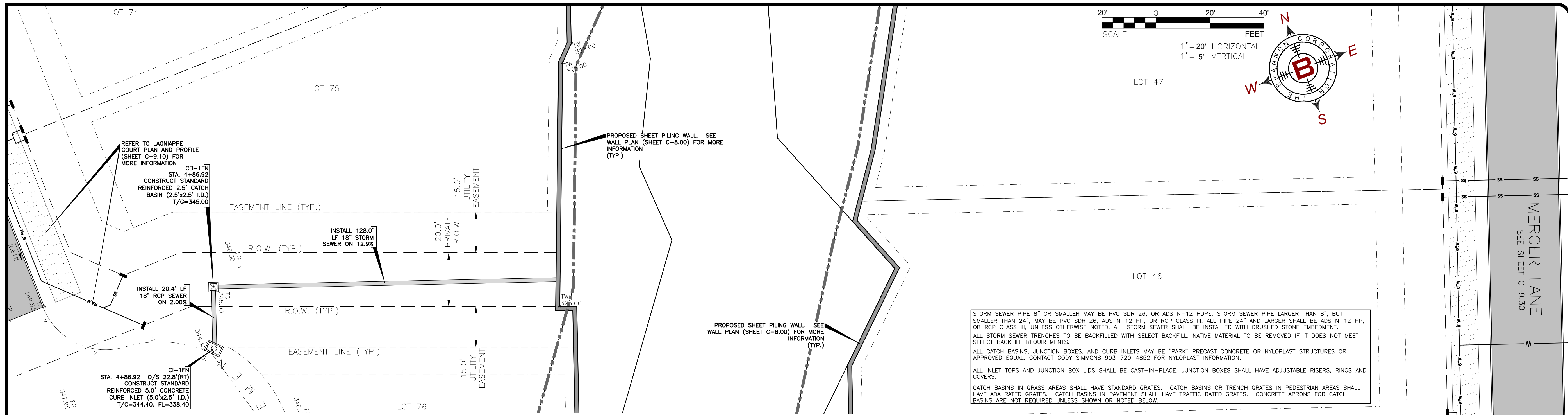
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SHEET NO.

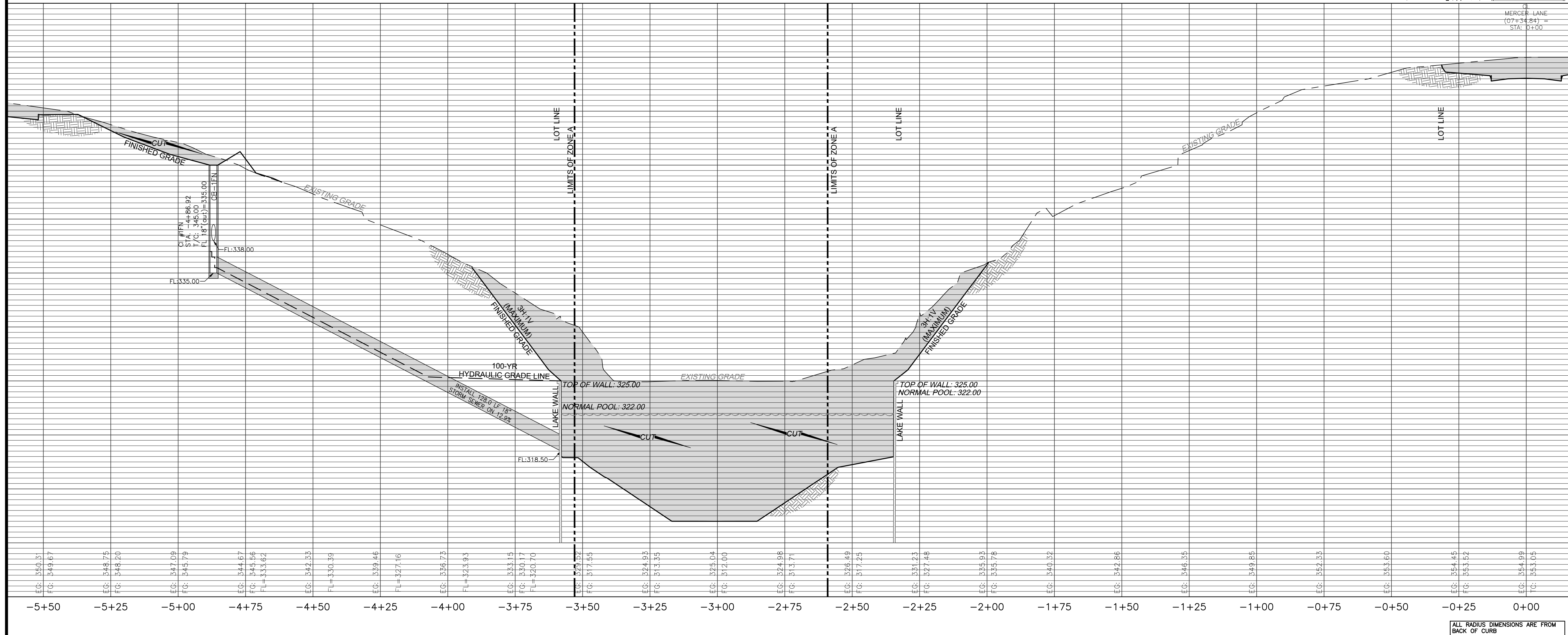
**C-6.00**

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STORM SEWER PIPE 8" OR SMALLER MAY BE PVC SDR 26, OR ADS N-12 HDPE. STORM SEWER PIPE LARGER THAN 8", BUT SMALLER THAN 24", MAY BE PVC SDR 26, ADS N-12 HP, OR RCP CLASS III. ALL PIPE 24" AND LARGER SHALL BE ADS N-12 HP, OR RCP CLASS III, UNLESS OTHERWISE NOTED. ALL STORM SEWER SHALL BE INSTALLED WITH CRUSHED STONE EMBEDMENT. ALL STORM SEWER TRENCHES TO BE BACKFILLED WITH SELECT BACKFILL. NATIVE MATERIAL TO BE REMOVED IF IT DOES NOT MEET SELECT BACKFILL REQUIREMENTS. ALL CATCH BASINS, JUNCTION BOXES, AND CURB INLETS MAY BE "PARK" PRECAST CONCRETE OR NYLOPLAST STRUCTURES OR APPROVED EQUAL. CONTACT CODY SIMMONS 903-720-4852 FOR NYLOPLAST INFORMATION. ALL INLET TOPS AND JUNCTION BOX LIDS SHALL BE CAST-IN-PLACE. JUNCTION BOXES SHALL HAVE ADJUSTABLE RISERS, RINGS AND COVERS. CATCH BASINS IN GRASS AREAS SHALL HAVE STANDARD GRATES. CATCH BASINS OR TRENCH GRATES IN PEDESTRIAN AREAS SHALL HAVE ADA RATED GRATES. CATCH BASINS IN PAVEMENT SHALL HAVE TRAFFIC RATED GRATES. CONCRETE APRONS FOR CATCH BASINS ARE NOT REQUIRED UNLESS SHOWN OR NOTED BELOW.



EC: 350.31	FC: 349.67	EC: 348.75	FC: 348.20	EC: 347.09	FC: 345.79	EC: 344.67	FC: 345.56	EC: 342.53	FL: 330.39	EC: 339.46	FL: 327.16	EC: 336.73	FL: 323.93	EC: 333.15	FC: 330.17	EC: 329.92	FC: 317.55	EC: 324.93	FC: 313.35	EC: 325.04	FC: 312.00	EC: 324.96	FC: 313.71	EC: 326.49	FC: 317.25	EC: 331.23	FC: 327.48	EC: 335.93	FC: 335.78	EC: 340.32	EC: 342.66	EC: 346.35	EC: 349.25	EC: 352.33	EC: 353.60	EC: 354.45	FC: 353.52	EC: 354.99	TC: 353.05
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ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

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DESIGNED BY: RLB  
DATE: JANUARY 2023

**PRELIMINARY**  
02-24-2023

1321 SOUTH BROADWAY  
DALLAS, TEXAS 75201  
972.242.1232

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
ENGINEERING REGISTRATION #F-262  
10000 BRANNON DRIVE

**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

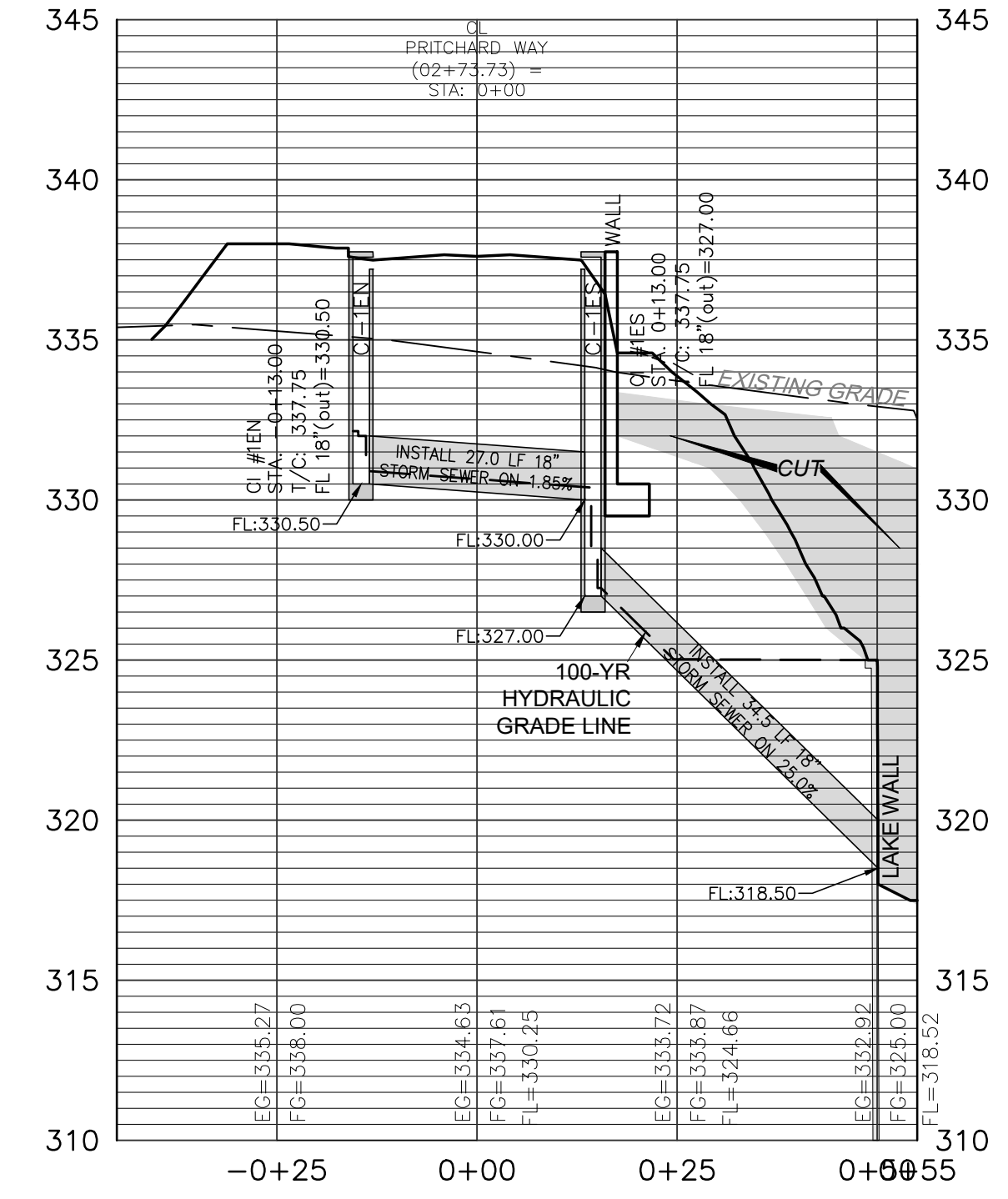
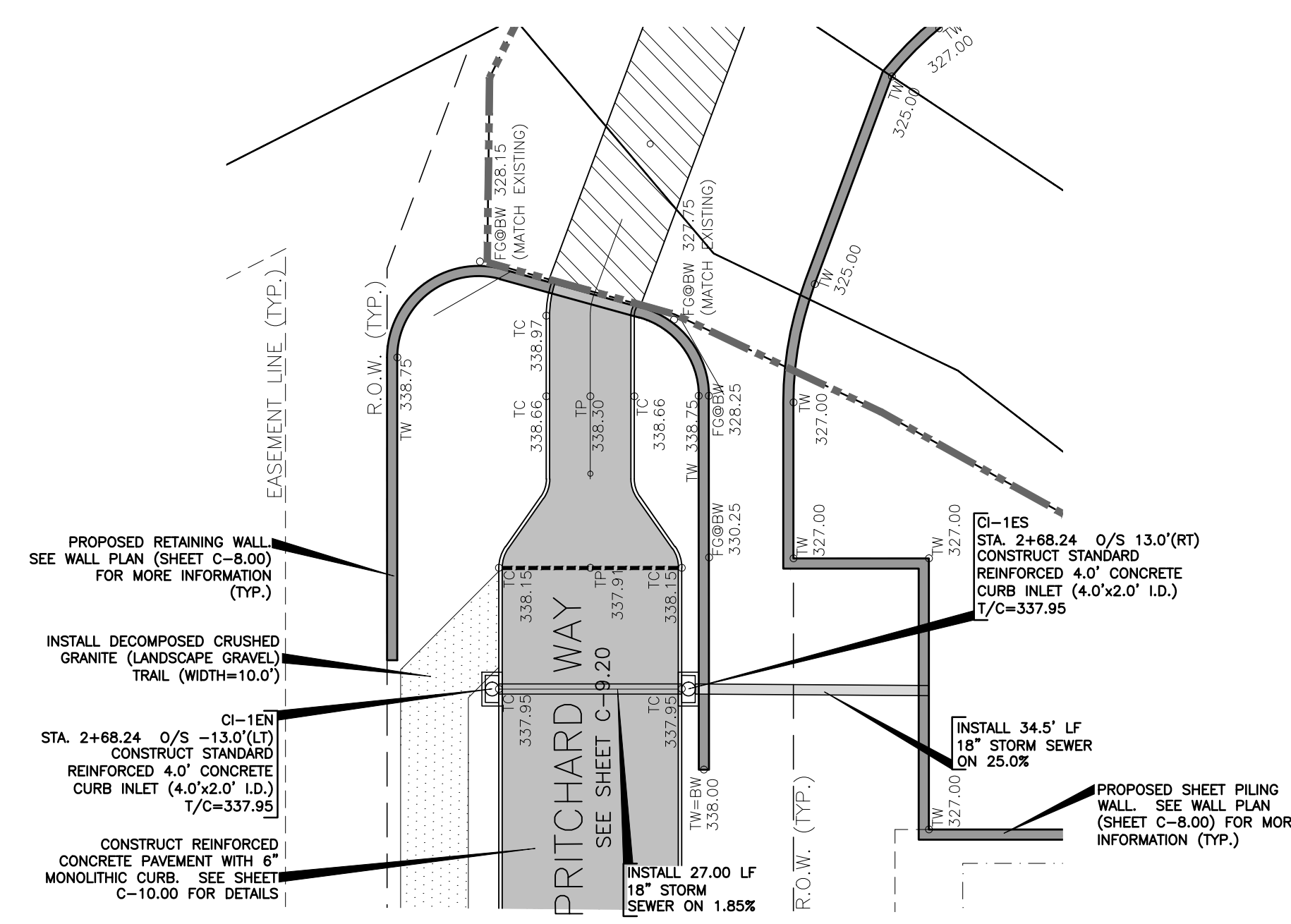
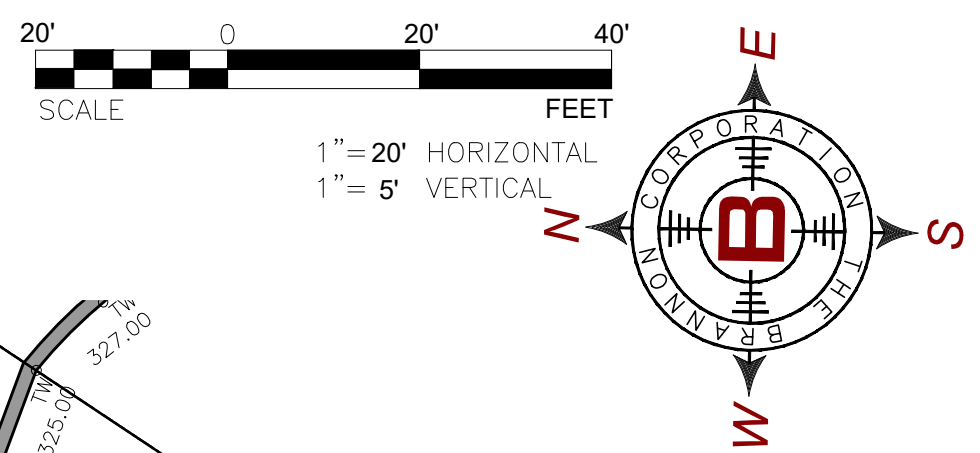
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PROJECT NO.  
22104

SHEET NO.  
**C-6.02**

**STORM SEWER PLAN AND PROFILES 1**

22104-06-02-Drainage Profiles.dwg



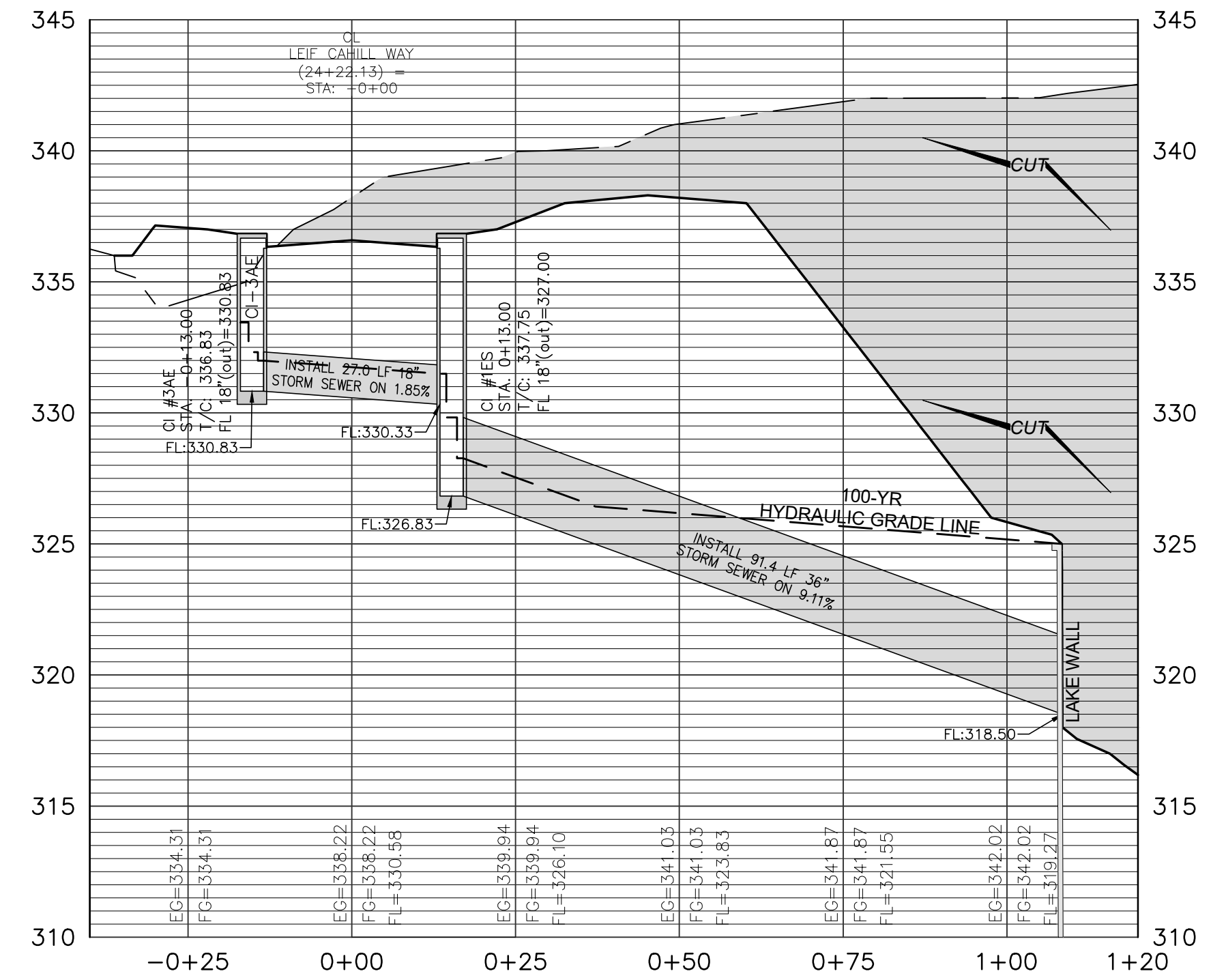
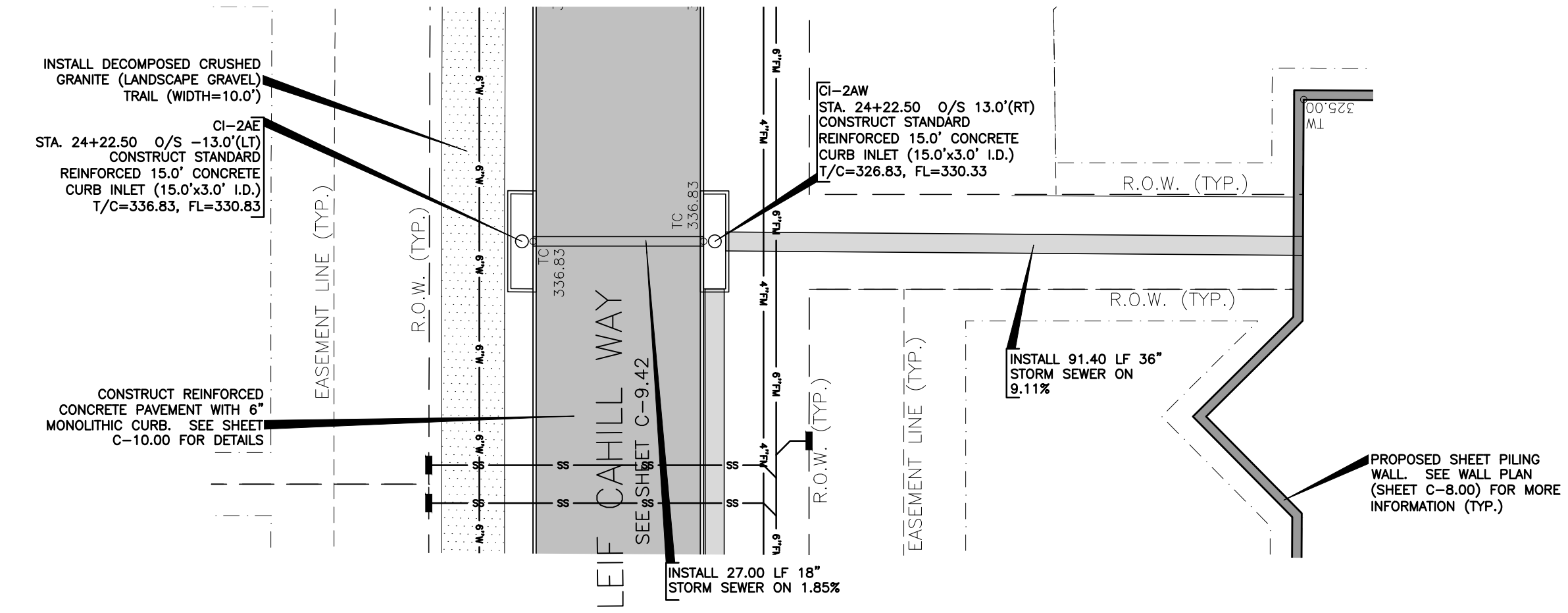
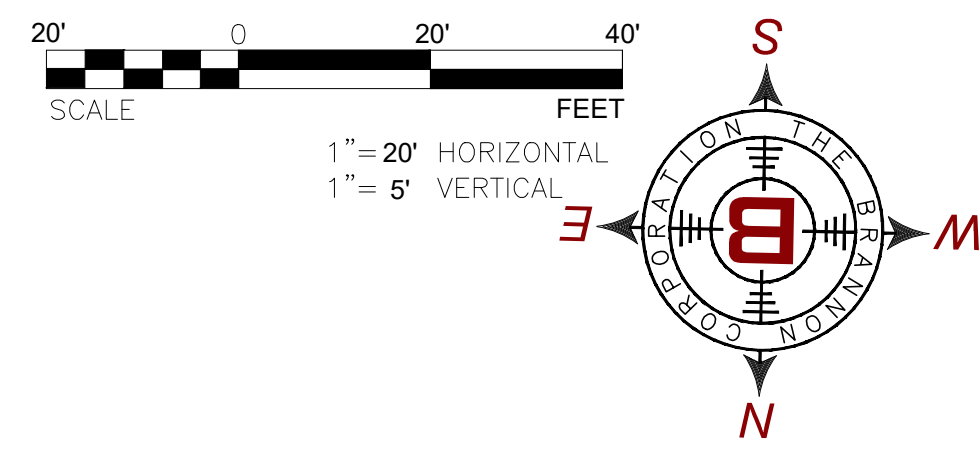
**A** STA: 2+68.24  
PRITCHARD WAY

STORM SEWER PIPE 8" OR SMALLER MAY BE PVC SDR 26, OR ADS N-12 HDPE. STORM SEWER PIPE LARGER THAN 8", BUT SMALLER THAN 24", MAY BE PVC SDR 26, ADS N-12 HDPE, OR RCP CLASS III. ALL PIPE 24" AND LARGER SHALL BE ADS N-12 HP, OR RCP CLASS III, UNLESS OTHERWISE NOTED. ALL STORM SEWER SHALL BE INSTALLED WITH CRUSHED STONE EMBEDMENT. ALL STORM SEWER TRENCHES TO BE BACKFILLED WITH SELECT BACKFILL. NATIVE MATERIAL TO BE REMOVED IF IT DOES NOT MEET SELECT BACKFILL REQUIREMENTS.

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**B** STA: 24+22.50  
LEIF CAHILL WAY

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# STORM SEWER PLAN AND PROFILES 2

DESIGNED BY: RLB  
DATE: JANUARY 2023

1321 SOUTH BROADWAY  
SUITE 100  
DALLAS, TEXAS 75201  
(972) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
M.P.R. REGISTRATION #F-262  
M.P.R. REGISTRATION #F-262

**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

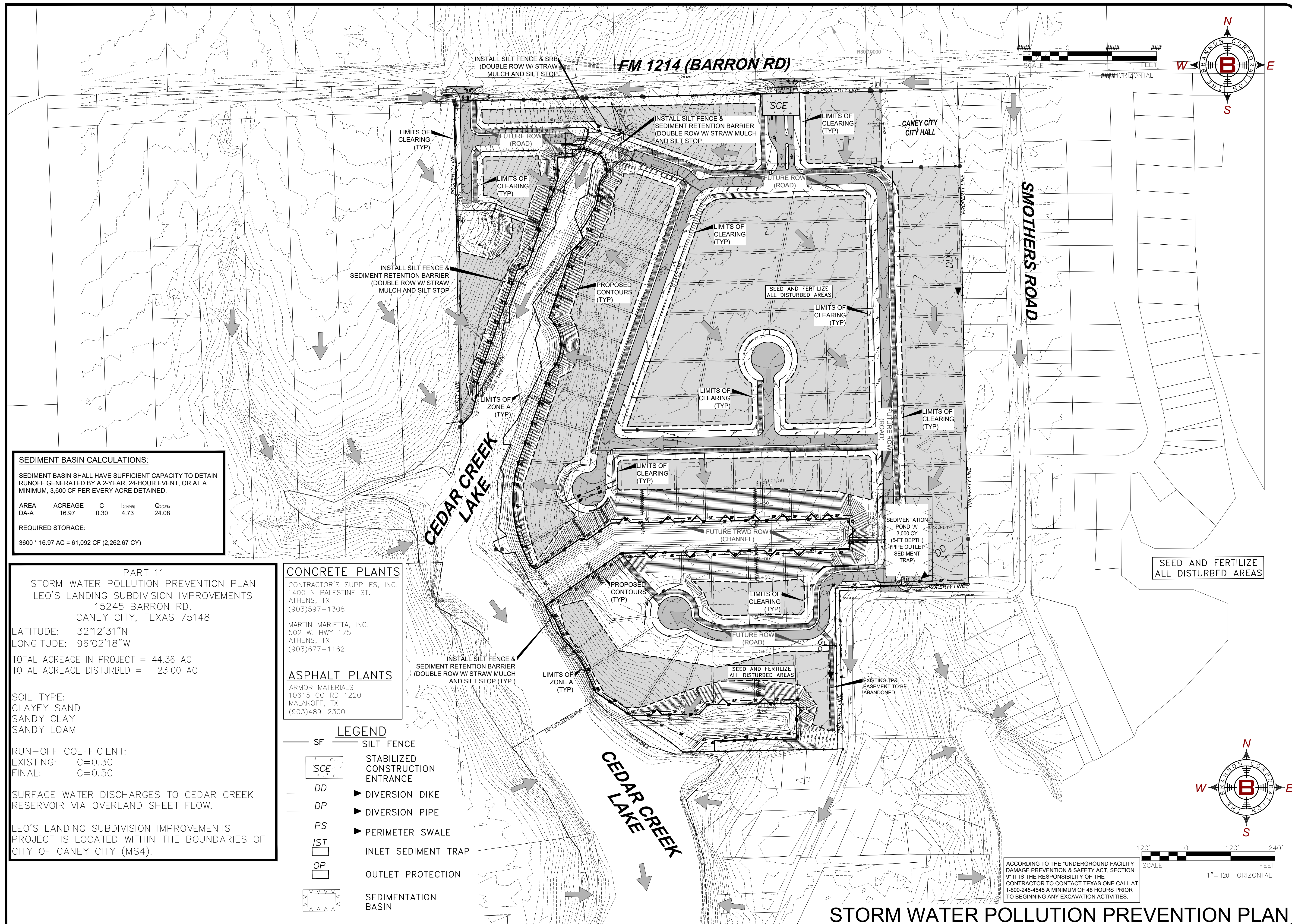
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22104

SHEET NO.  
**C-6.03**

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**SEDIMENT BASIN CALCULATIONS:**

SEDIMENT BASIN SHALL HAVE SUFFICIENT CAPACITY TO DETAIN RUNOFF GENERATED BY A 2-YEAR, 24-HOUR EVENT, OR AT A MINIMUM, 3,600 CF PER EVERY ACRE DETAINED.

AREA	ACREAGE	C	I <sub>10</sub> (HR)	Q <sub>10</sub> (CF/S)
DA-A	16.97	0.30	4.73	24.08

REQUIRED STORAGE:  
3600 \* 16.97 AC = 61,092 CF (2,262.67 CY)

**PART 11**  
**STORM WATER POLLUTION PREVENTION PLAN**  
**LEO'S LANDING SUBDIVISION IMPROVEMENTS**  
 15245 BARRON RD.  
 CANEY CITY, TEXAS 75148

LATITUDE: 32°12'31"N  
 LONGITUDE: 96°02'18"W

TOTAL ACREAGE IN PROJECT = 44.36 AC  
 TOTAL ACREAGE DISTURBED = 23.00 AC

SOIL TYPE:  
 CLAYEY SAND  
 SANDY CLAY  
 SANDY LOAM

RUN-OFF COEFFICIENT:  
 EXISTING: C=0.30  
 FINAL: C=0.50

SURFACE WATER DISCHARGES TO CEDAR CREEK RESERVOIR VIA OVERLAND SHEET FLOW.

LEO'S LANDING SUBDIVISION IMPROVEMENTS PROJECT IS LOCATED WITHIN THE BOUNDARIES OF CITY OF CANEY CITY (MS4).

- CONCRETE PLANTS**  
 CONTRACTOR'S SUPPLIES, INC.  
 1400 N PALESTINE ST.  
 ATHENS, TX  
 (903)597-1308
- MARTIN MARIETTA, INC.  
 502 W. HWY 175  
 ATHENS, TX  
 (903)677-1162
- ASPHALT PLANTS**  
 ARMOR MATERIALS  
 10615 CO RD 1220  
 MALAKOFF, TX  
 (903)489-2300

- LEGEND**
- SF — SILT FENCE
  - SCE — STABILIZED CONSTRUCTION ENTRANCE
  - DD — DIVERSION DIKE
  - DP — DIVERSION PIPE
  - PS — PERIMETER SWALE
  - IST — INLET SEDIMENT TRAP
  - OP — OUTLET PROTECTION
  - [Symbol] — SEDIMENTATION BASIN

DESIGNED BY: RLB  
 DATE: JANUARY 2023

PRELIMINARY  
 02/24/2023

1321 SOUTH BROADWAY  
 TYLER, TX 75701  
 (903) 597-2122

**BRANNON CORP**  
 CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
 TX FIRM REGISTRATION #F-242  
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**CONSTRUCTION PLANS**  
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 CANEY CITY, HENDERSON COUNTY, TEXAS

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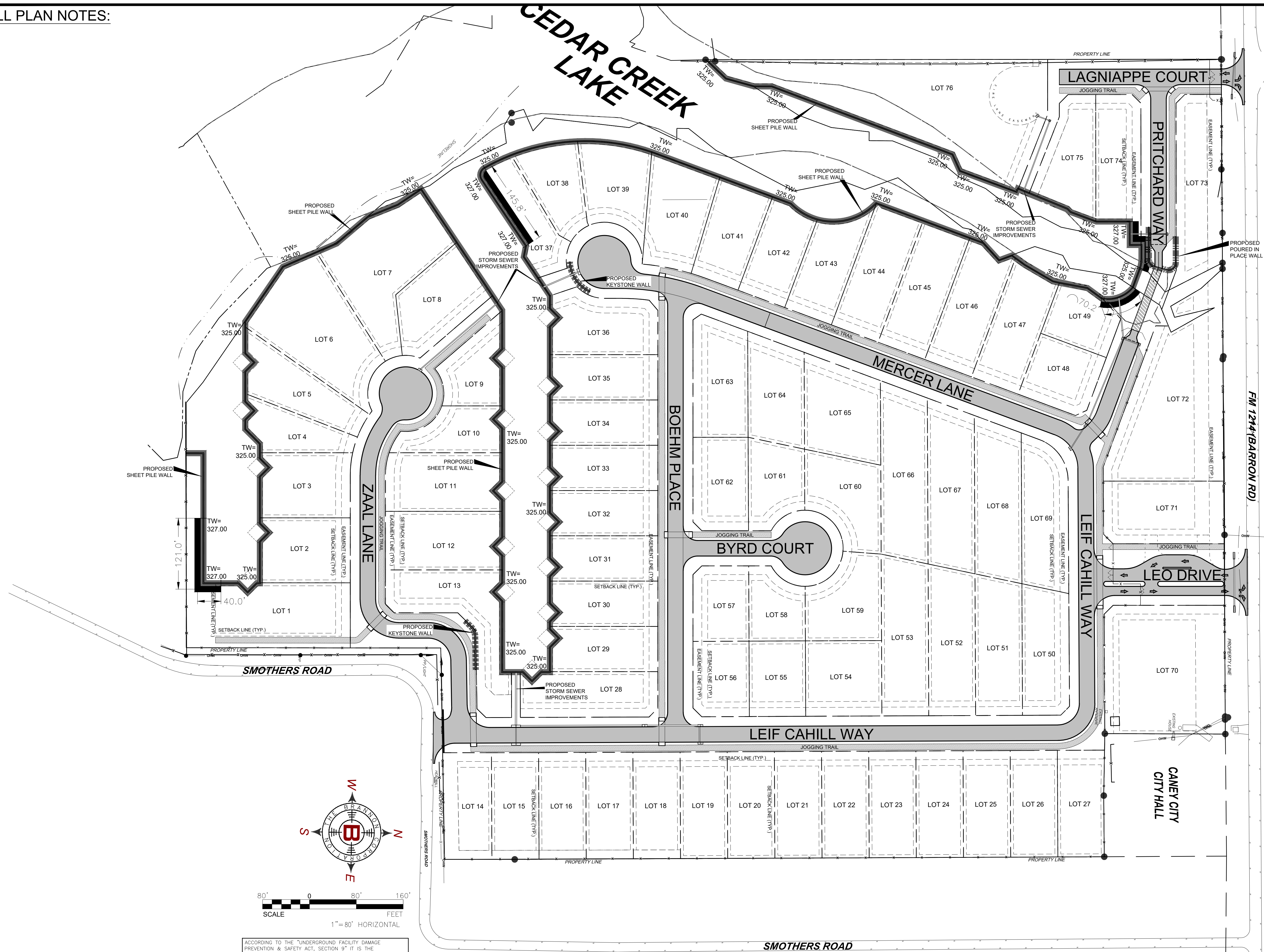
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SCALE: 1" = 120' HORIZONTAL

WALL PLAN NOTES:



ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.

DESIGNED BY: RLB  
 DATE: JANUARY 2023

**PRELIMINARY**  
 02-24-2023

1321 L SOUTH BROADWAY  
 SUITE 100  
 DALLAS, TEXAS 75215  
 (972) 597-2122  
**BRANNON CORP**  
 CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
 LICENSE REGISTRATION #FF-262  
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CONSTRUCTION PLANS  
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**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
 821 INVESTMENTS, LLC.  
 CANEY CITY, HENDERSON COUNTY, TEXAS

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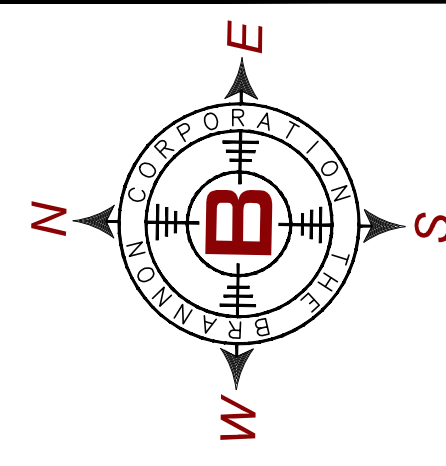
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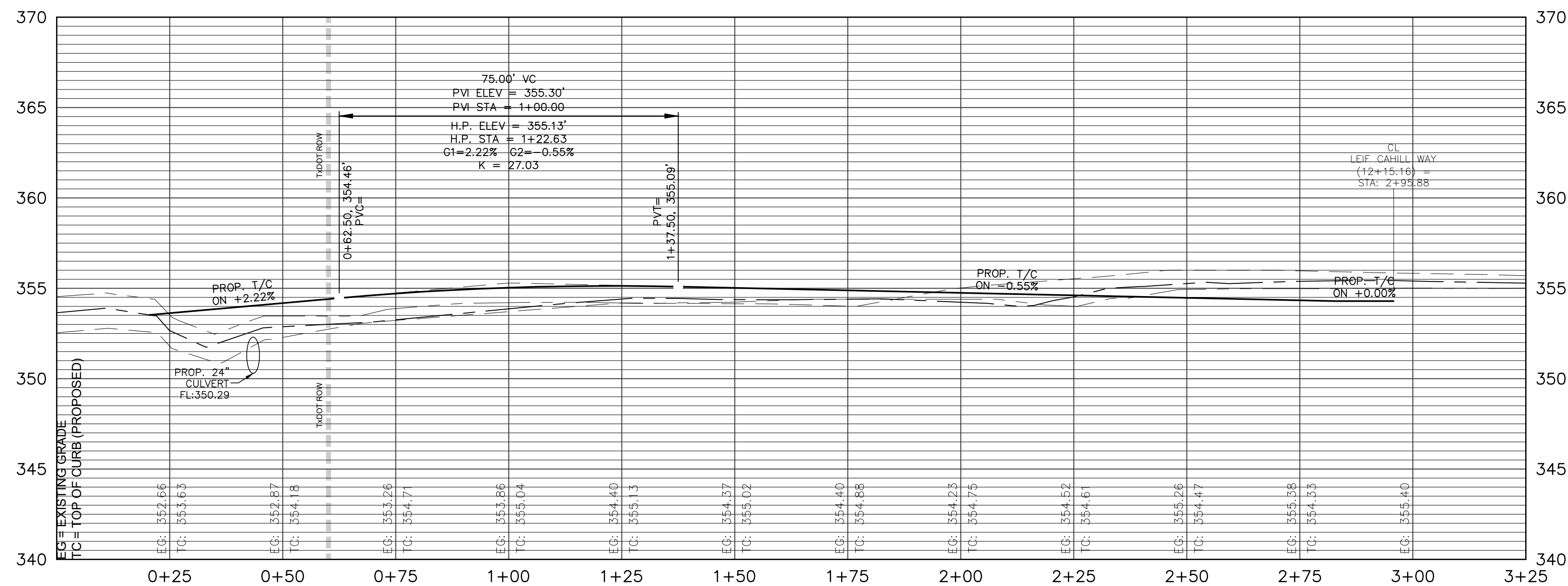
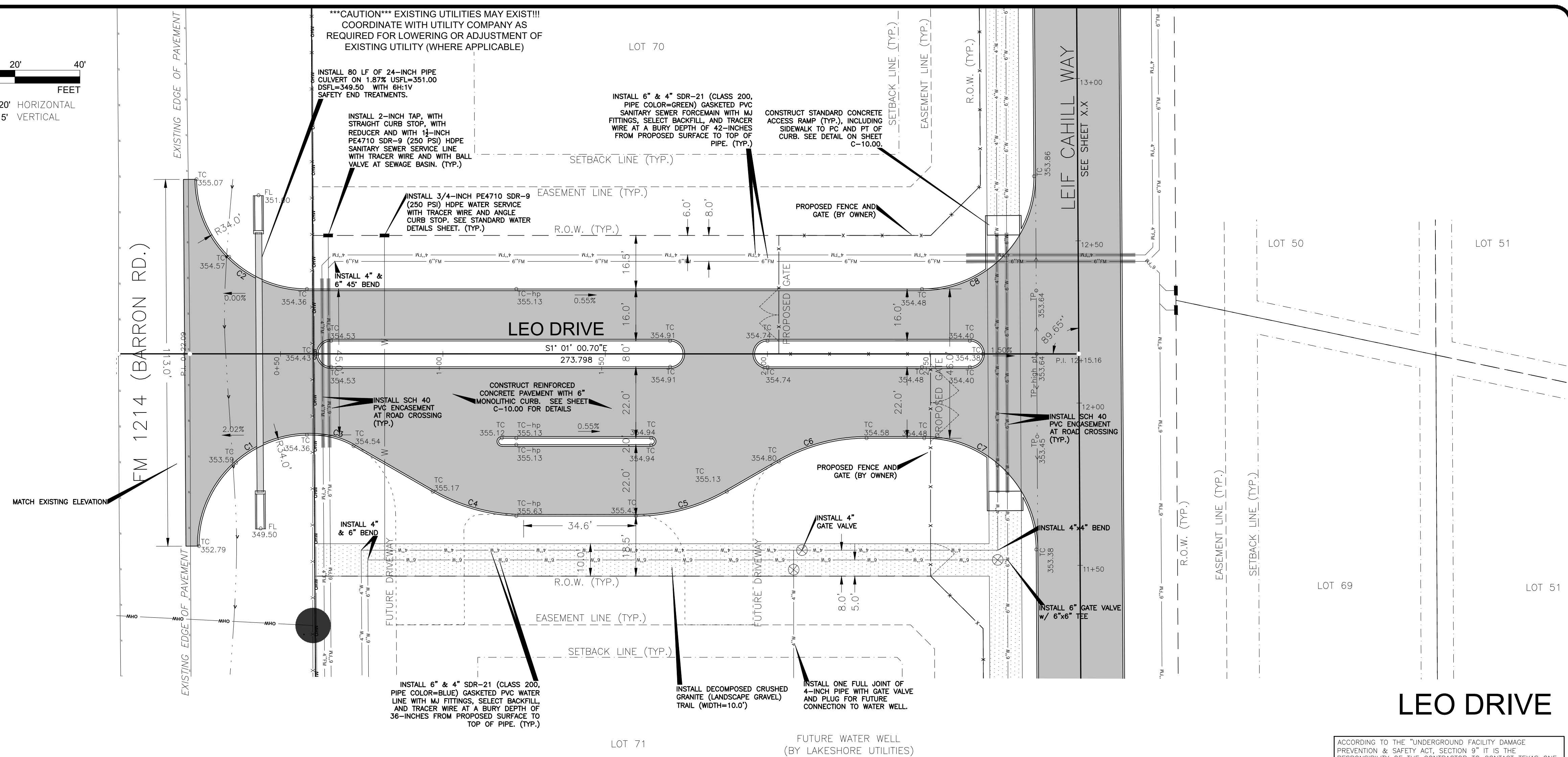
WALL PLAN AND DETAILS

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22-104-08-C-Wall Plan.dwg



SCALE  
0 20' 40'  
FEET  
1" = 20' HORIZONTAL  
1" = 5' VERTICAL



ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.

ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

Curve Table			
Curve #	Length	Radius	Delta
C1	57.893	34.000	97.5600
C2	53.183	34.000	89.6219
C3	9.956	25.000	22.8181
C4	29.322	56.000	30.0000
C5	29.322	56.000	30.0000
C6	28.274	54.000	30.0000
C7	53.982	34.500	89.6497
C8	54.403	34.500	90.3503

DESIGNED BY: RLB  
DATE: JANUARY 2023

1321 SOUTH BROADWAY  
SUITE 101  
19031 597-2122

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CIVIL ENGINEERS

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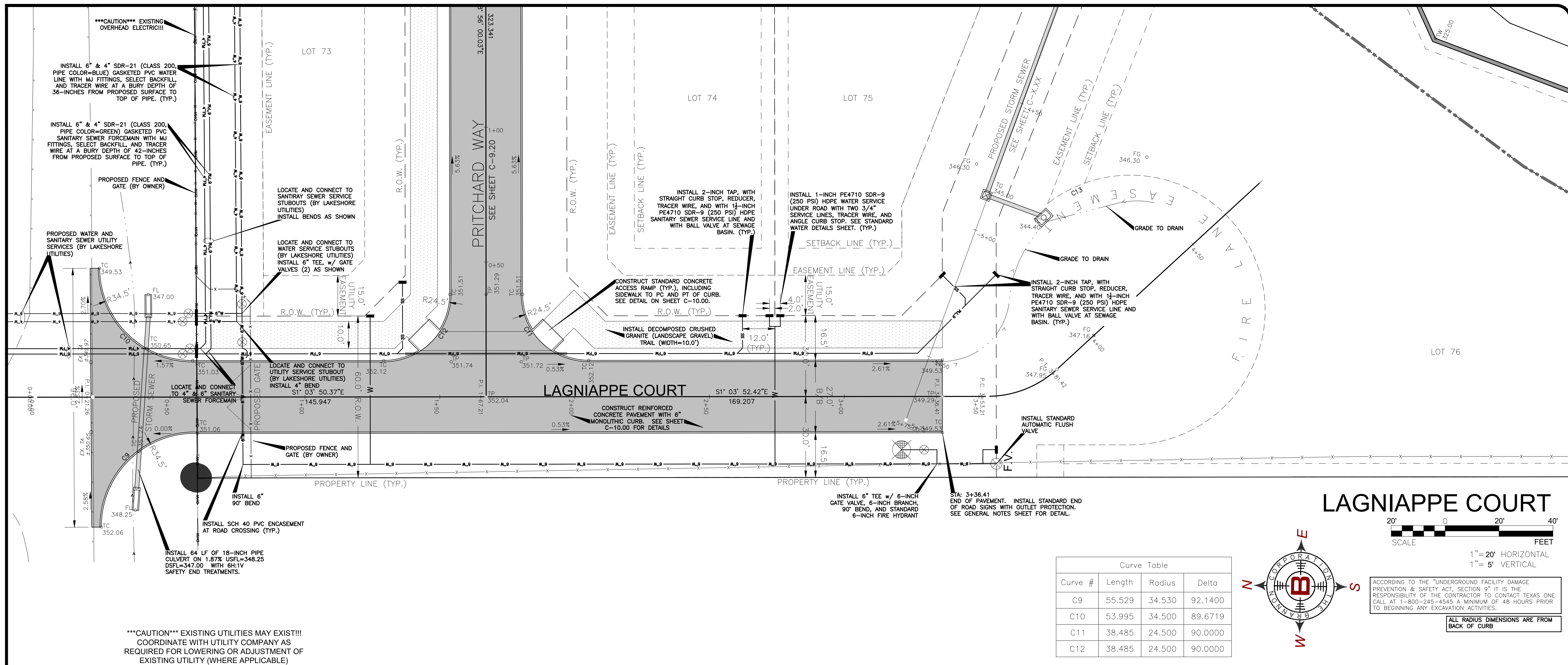
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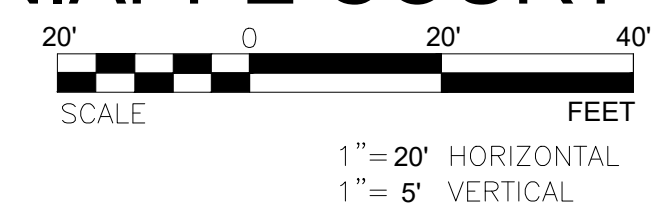
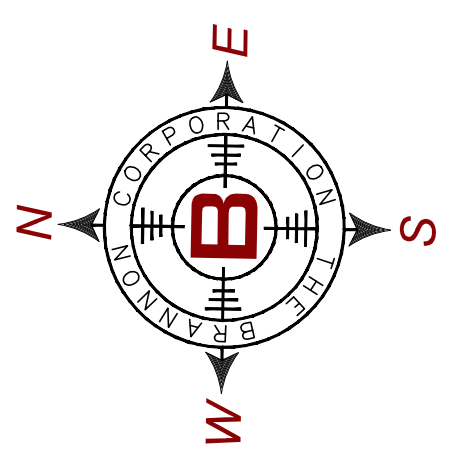
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22104-09.0-P&P.dwg



Curve Table

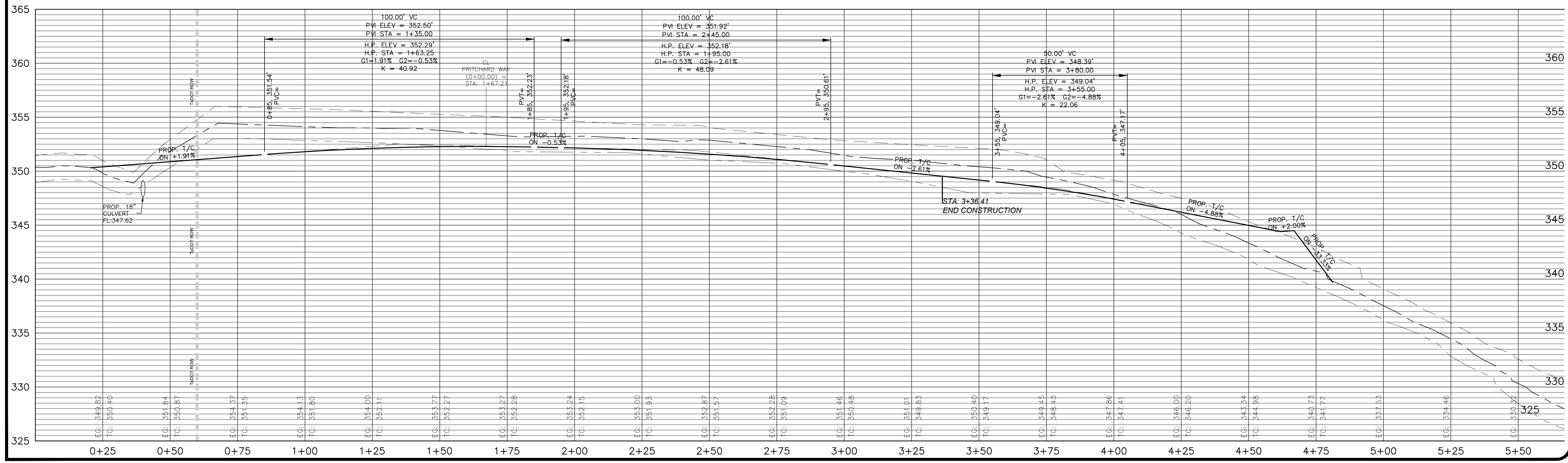
Curve #	Length	Radius	Delta
C9	55.529	34.530	92.1400
C10	53.995	34.500	89.6719
C11	38.485	24.500	90.0000
C12	38.485	24.500	90.0000



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ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

\*\*\*CAUTION\*\*\* EXISTING UTILITIES MAY EXIST!!  
COORDINATE WITH UTILITY COMPANY AS  
REQUIRED FOR LOWERING OR ADJUSTMENT OF  
EXISTING UTILITY (WHERE APPLICABLE)



DESIGNED BY: RLB  
DATE: JANUARY 2023

PRELIMINARY  
02-24-2023

1321 SOUTH BROADWAY  
SUITE 101  
HOUSTON, TEXAS 77003  
957-2122

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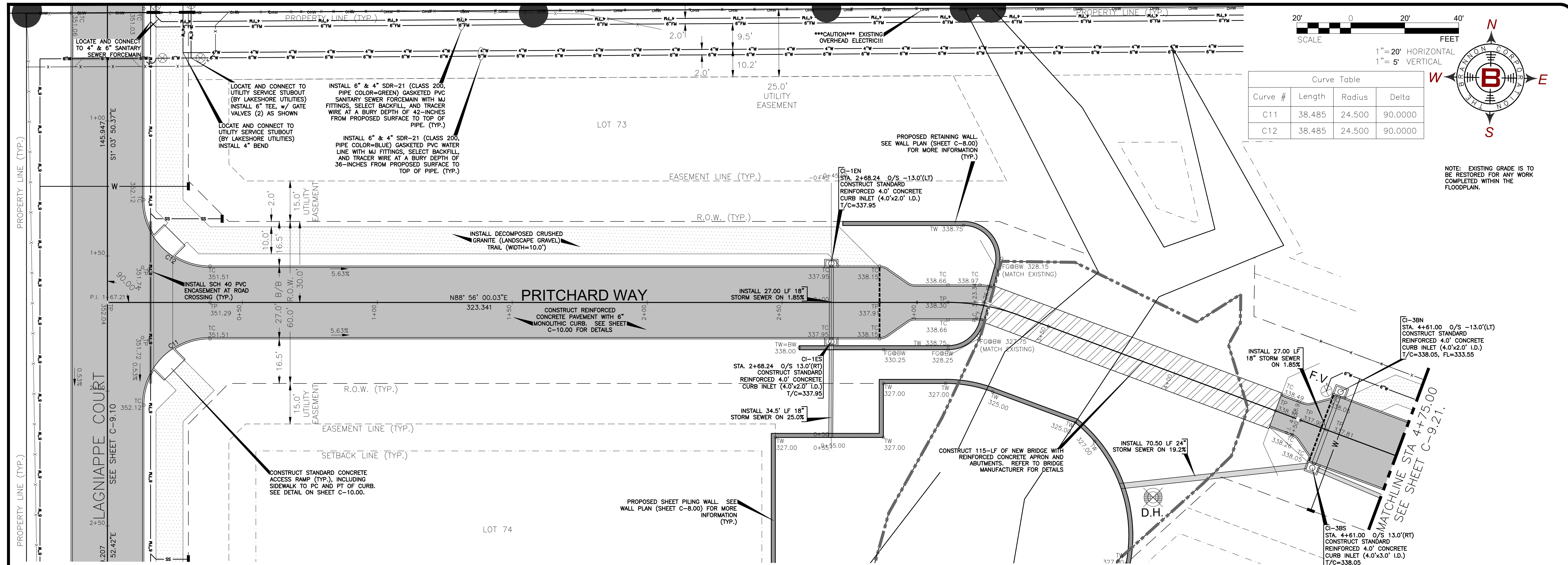
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FOR  
**REVIEW ONLY**

PROJECT NO.  
22104

SHEET NO.  
**C-9.01**

22104-09-01-P&P.dwg





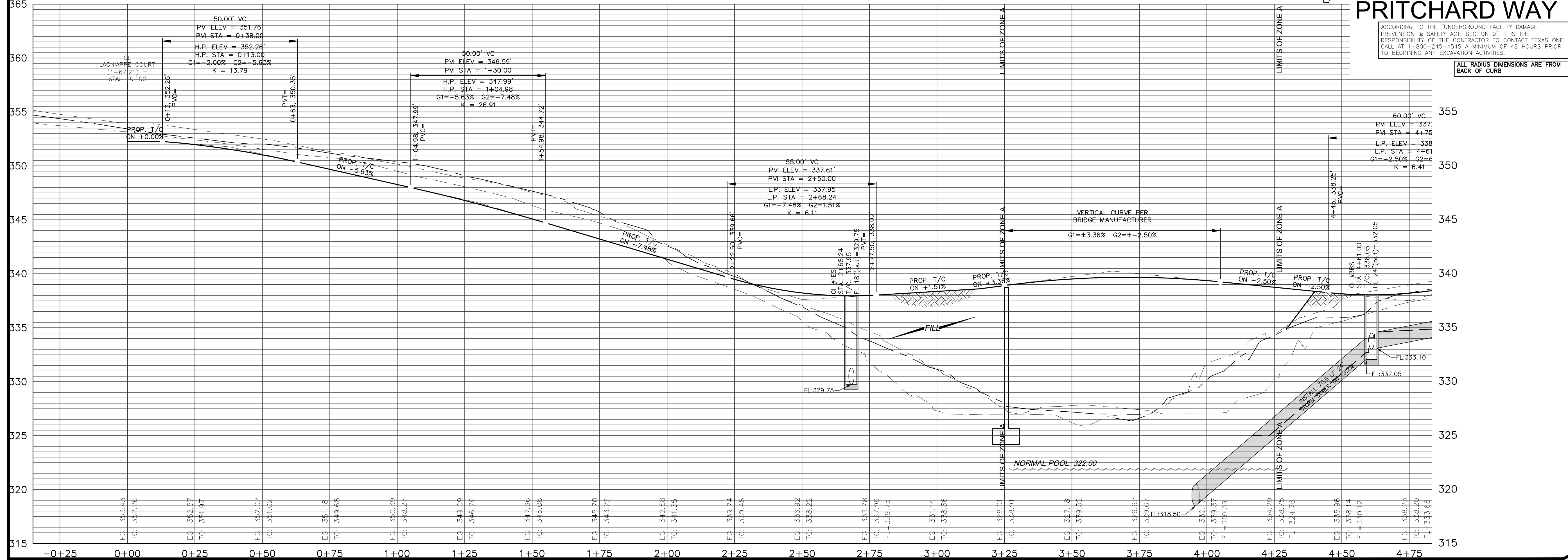
DESIGNED BY: RLB  
 DATE: JANUARY 2023

PRELIMINARY  
 02-24-2023

1321 SOUTH BROADWAY  
 SUITE 100  
 HOUSTON, TEXAS 77001  
 (713) 997-2122

**BRANNON CORP**  
 CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
 ENGINEERING REGISTRATION #FF-262  
 LICENSE #13896 (S.E.)



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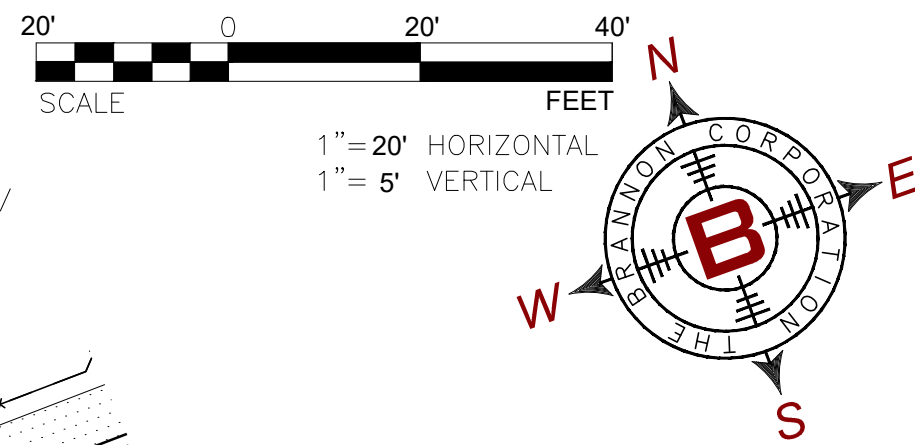
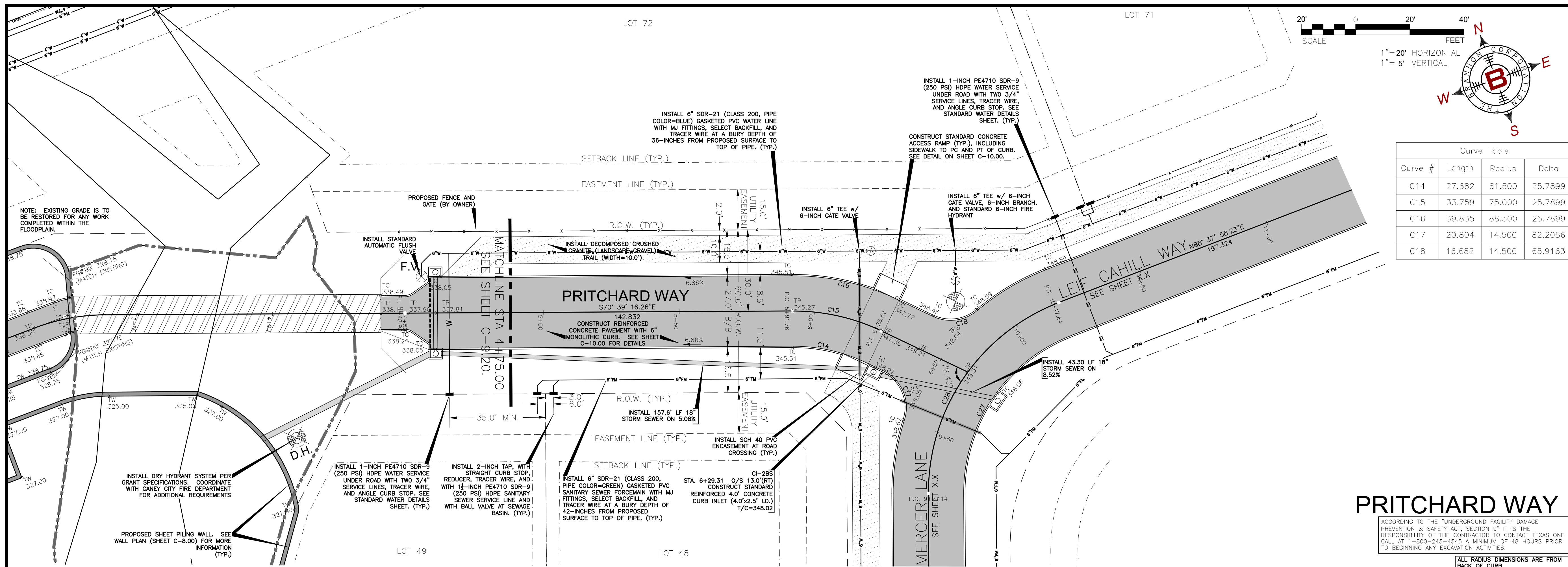
**CONSTRUCTION PLANS FOR LEOS LANDING SUBDIVISION IMPROVEMENTS**  
 821 INVESTMENTS, LLC.  
 CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

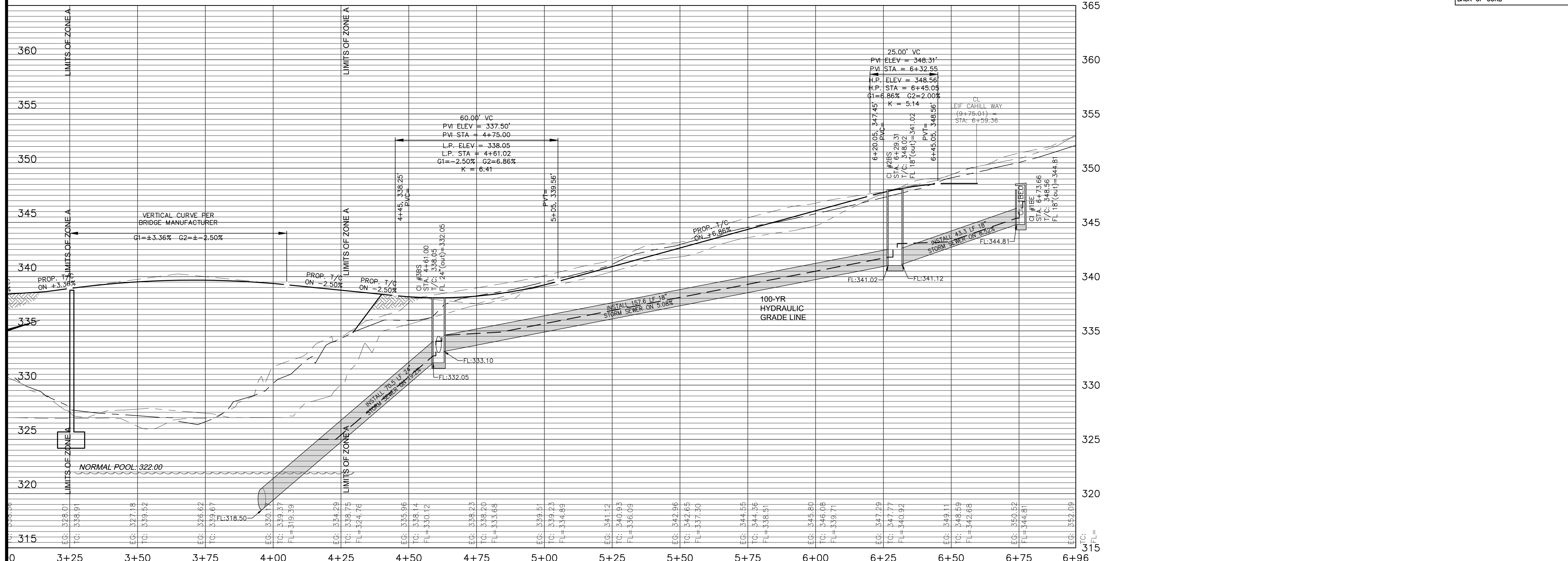
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PROJECT NO. 22104  
 SHEET NO. **C-9.20**

22104-09-01-R&P.dwg



Curve Table			
Curve #	Length	Radius	Delta
C14	27.682	61.500	25.7899
C15	33.759	75.000	25.7899
C16	39.835	88.500	25.7899
C17	20.804	14.500	82.2056
C18	16.682	14.500	65.9163



**PRITCHARD WAY**

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.

ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

DESIGNED BY: RLB  
DATE: JANUARY 2023

**PRELIMINARY**  
02/24/2023

1321 SOUTH BROADWAY  
SUITE 101  
DALLAS, TEXAS 75201  
(972) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
M.P.R. REGISTRATION #FF-242  
LAW #BRANNON00000000

**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

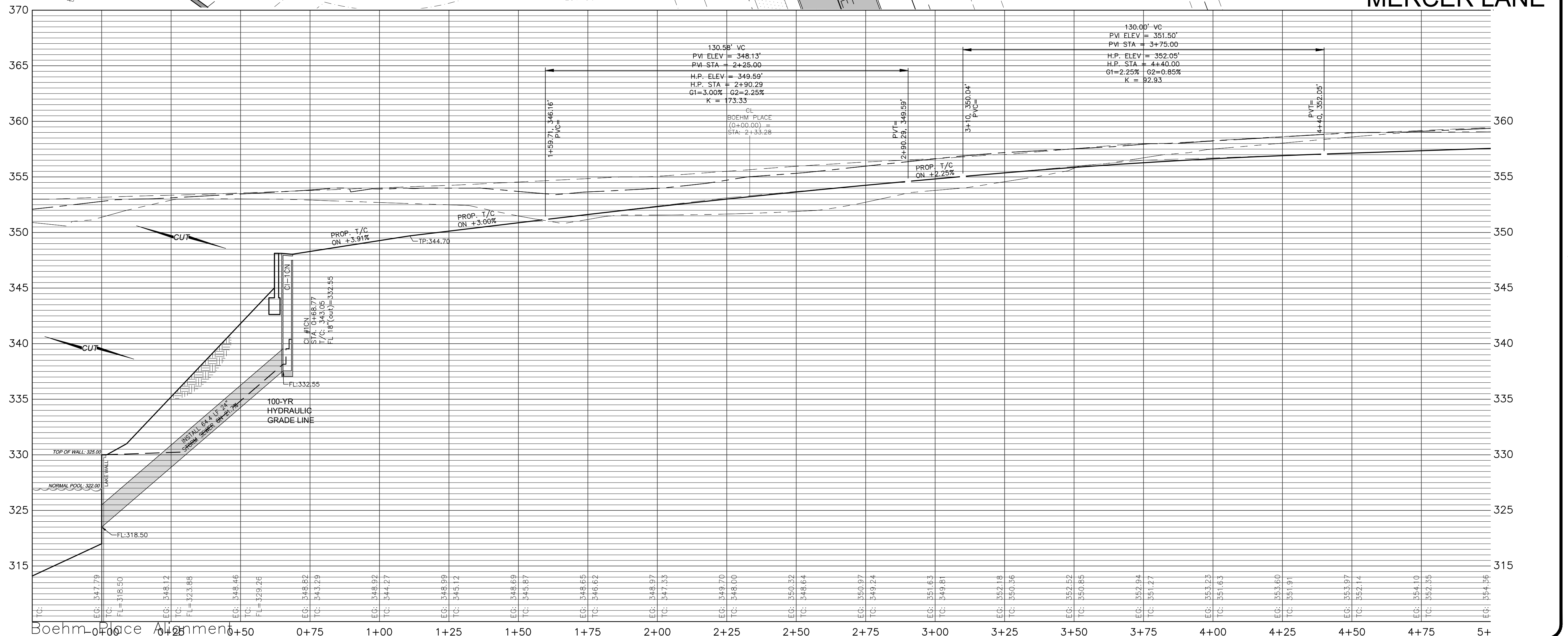
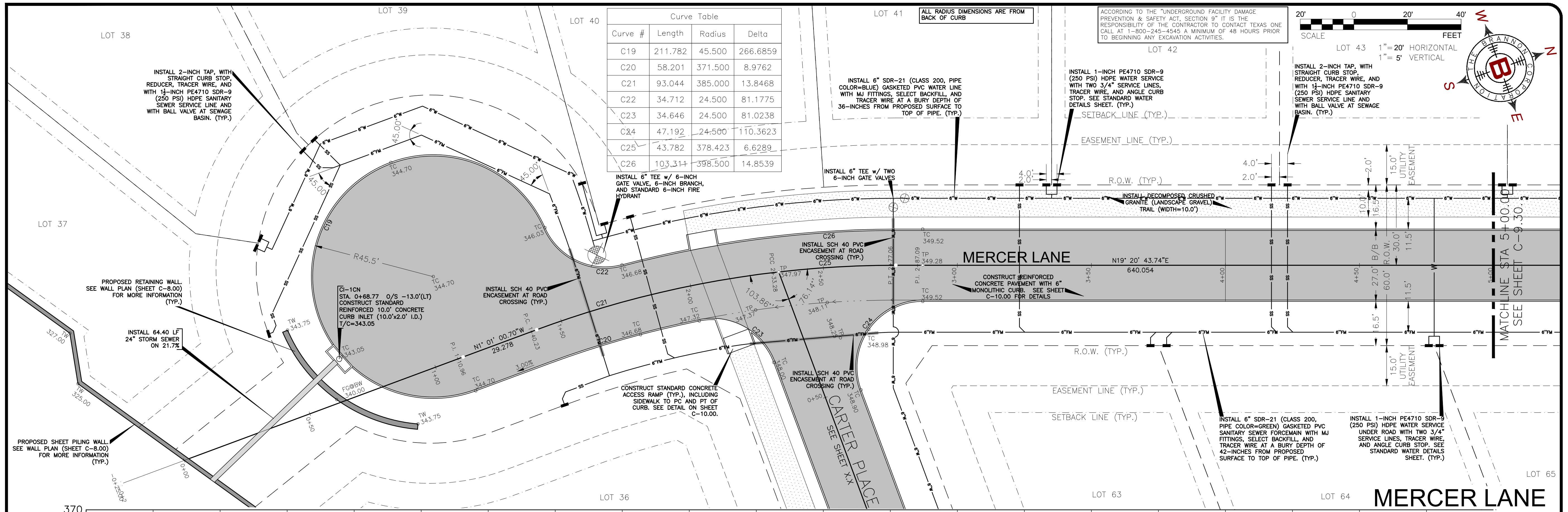
NO.	DATE	REVISIONS	REMARKS

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SHEET NO. **C-9.21**

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DALLAS, TEXAS 75201  
(972) 597-2122

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CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
M.P. REGISTRATION NO. FF-262  
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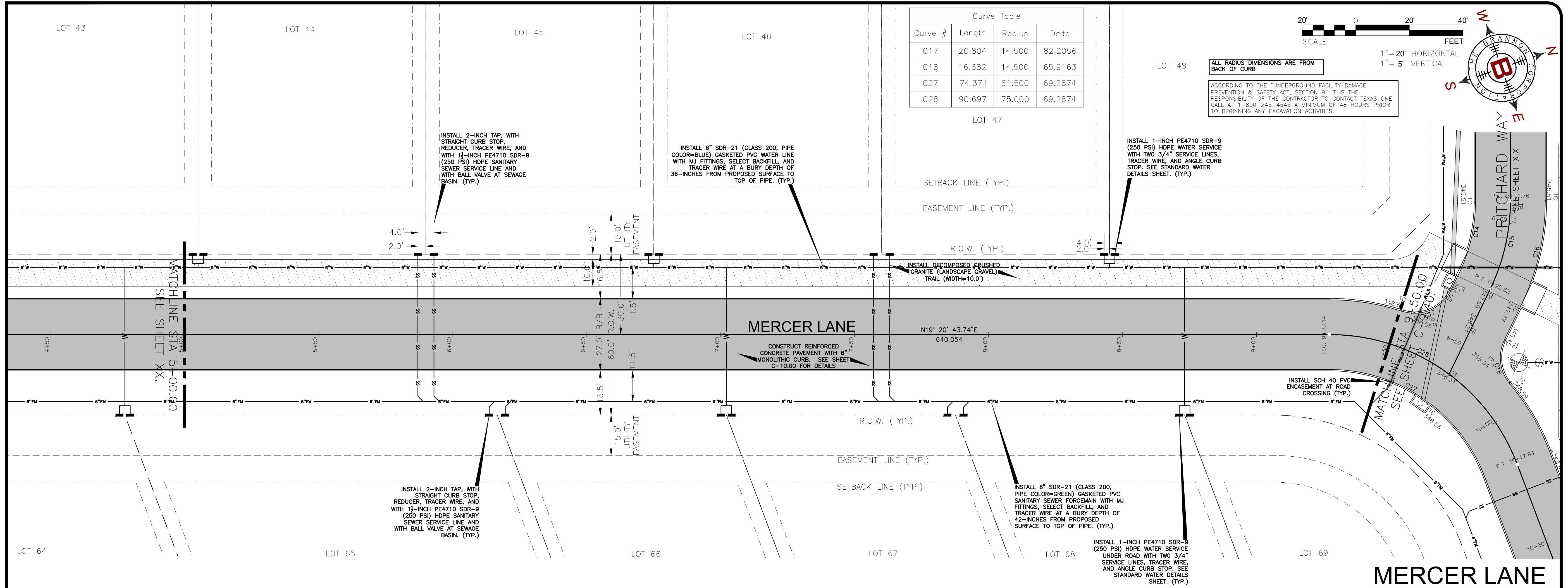
CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

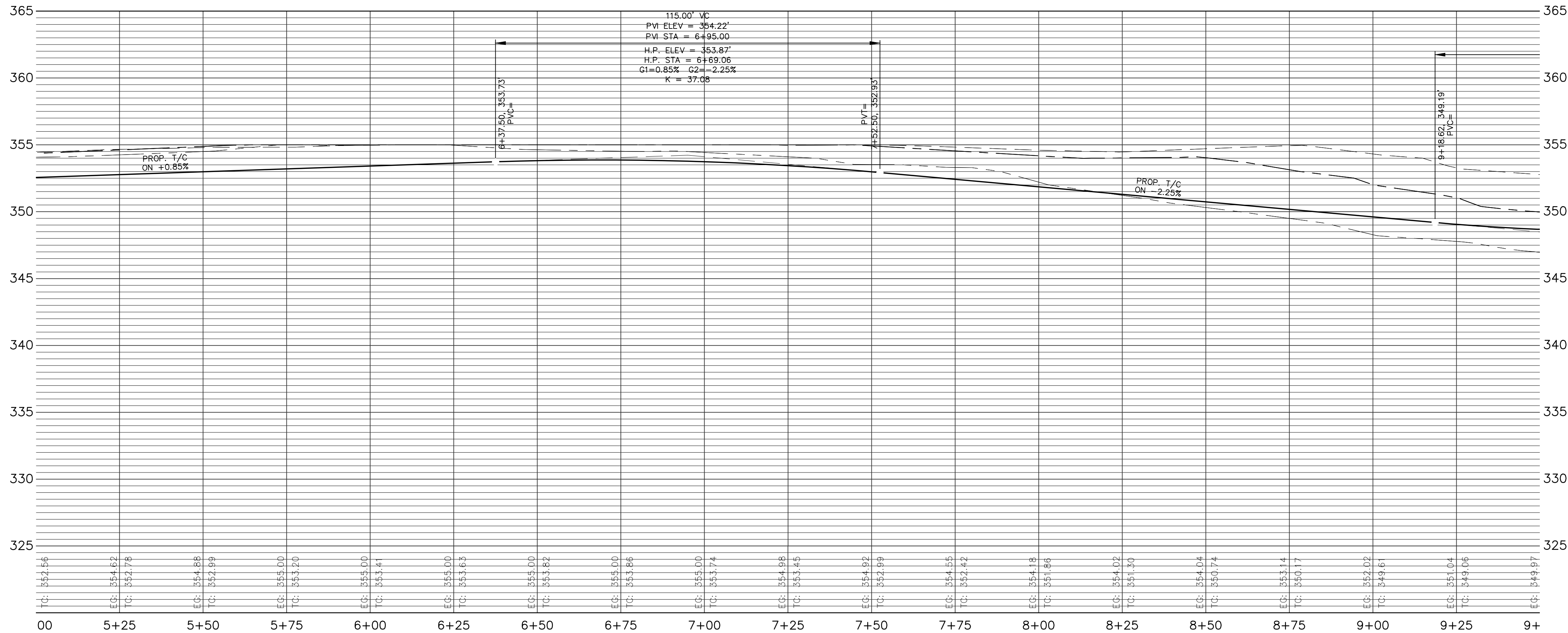
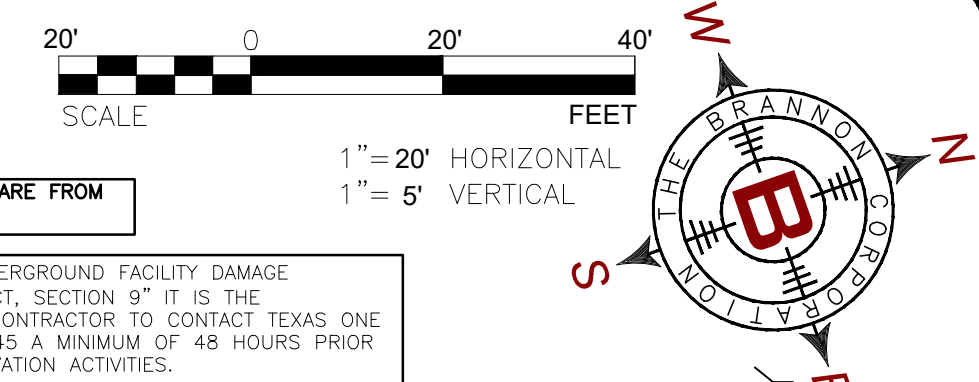
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SHEET NO. **C-9.30**

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Curve #	Length	Radius	Delta
C17	20.804	14.500	82.2056
C18	16.682	14.500	65.9163
C27	74.371	61.500	69.2874
C28	90.697	75.000	69.2874



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 DATE: JANUARY 2023

PRELIMINARY  
 02-24-2023

1321 SOUTH BROADWAY  
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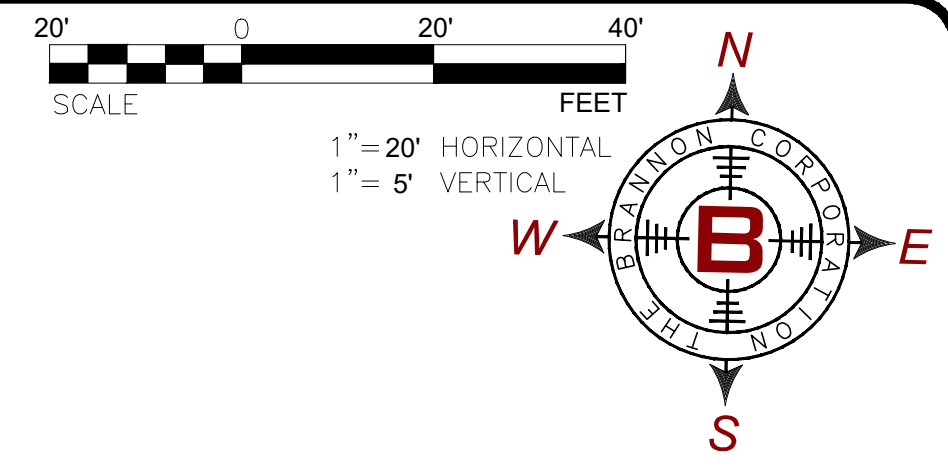
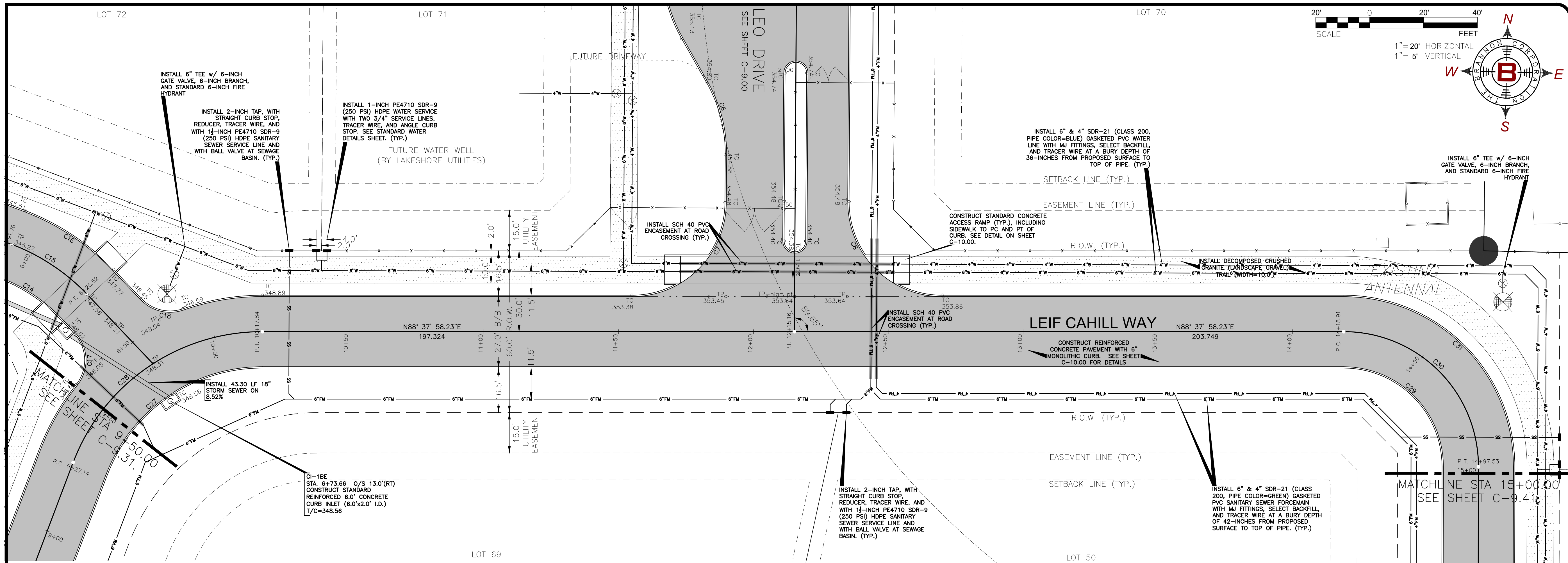
CONSTRUCTION PLANS  
 FOR  
 LEOS LANDING SUBDIVISION IMPROVEMENTS  
 821 INVESTMENTS, L.L.C.  
 CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

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(713) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

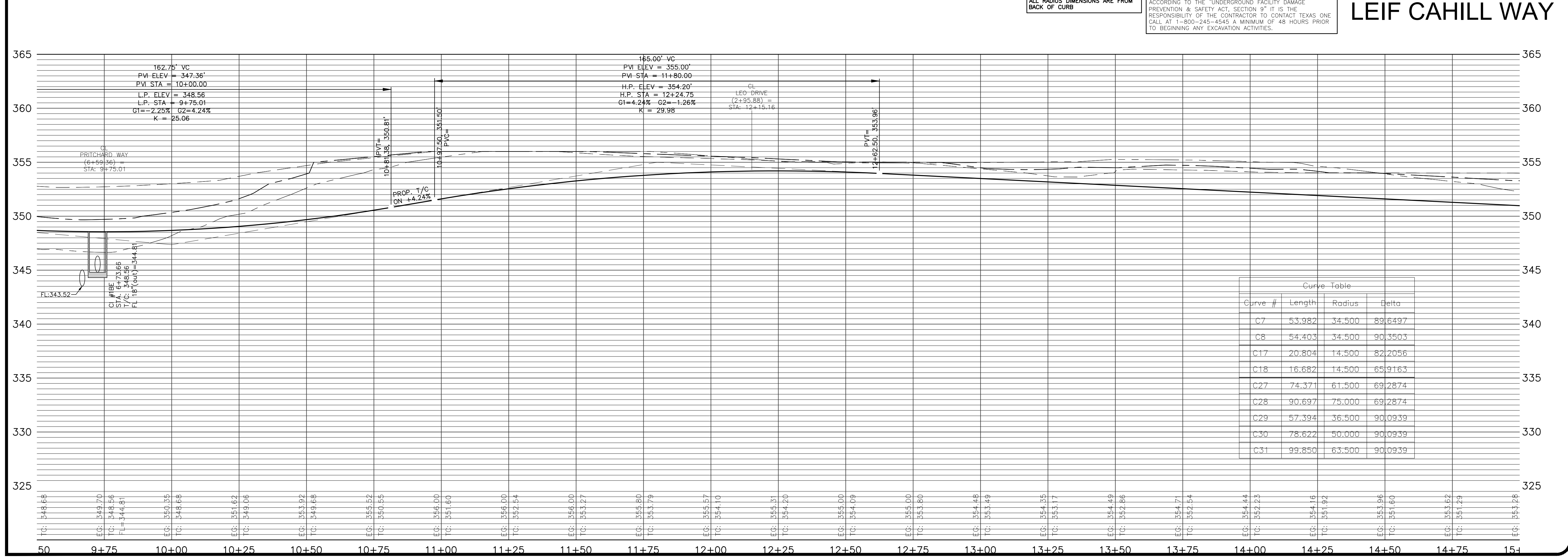
THE C.T. BRANNON CORPORATION  
M.P. REGISTRATION #FF-262  
LAW #BRANNON00000000

**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

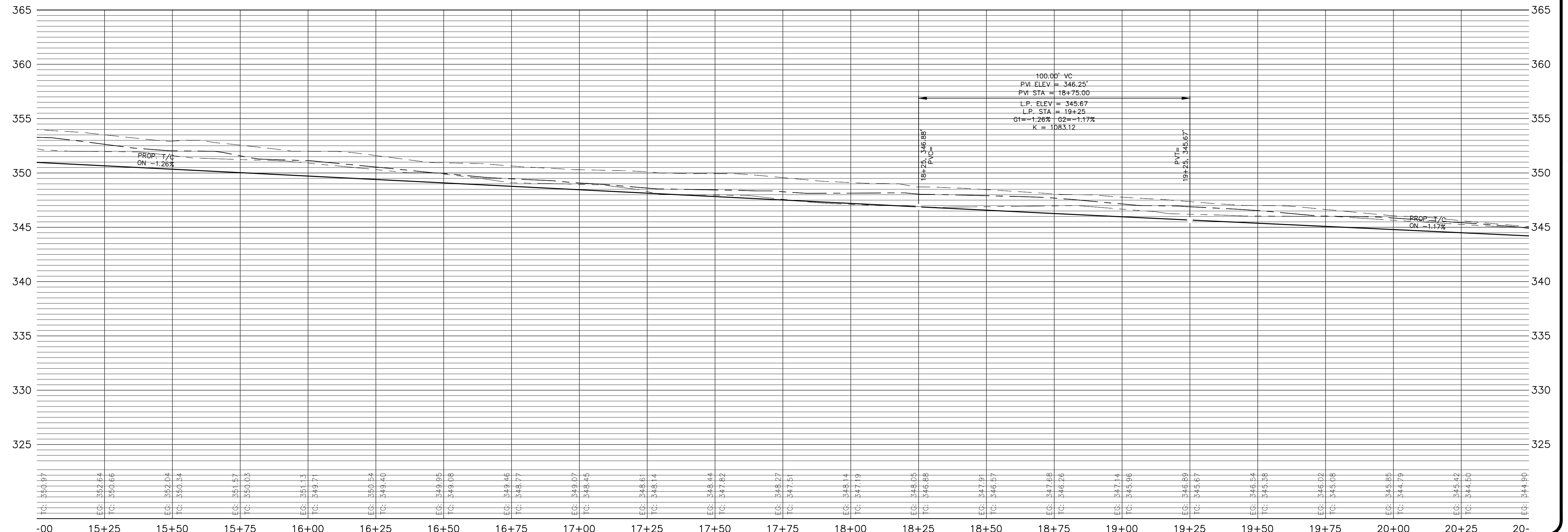
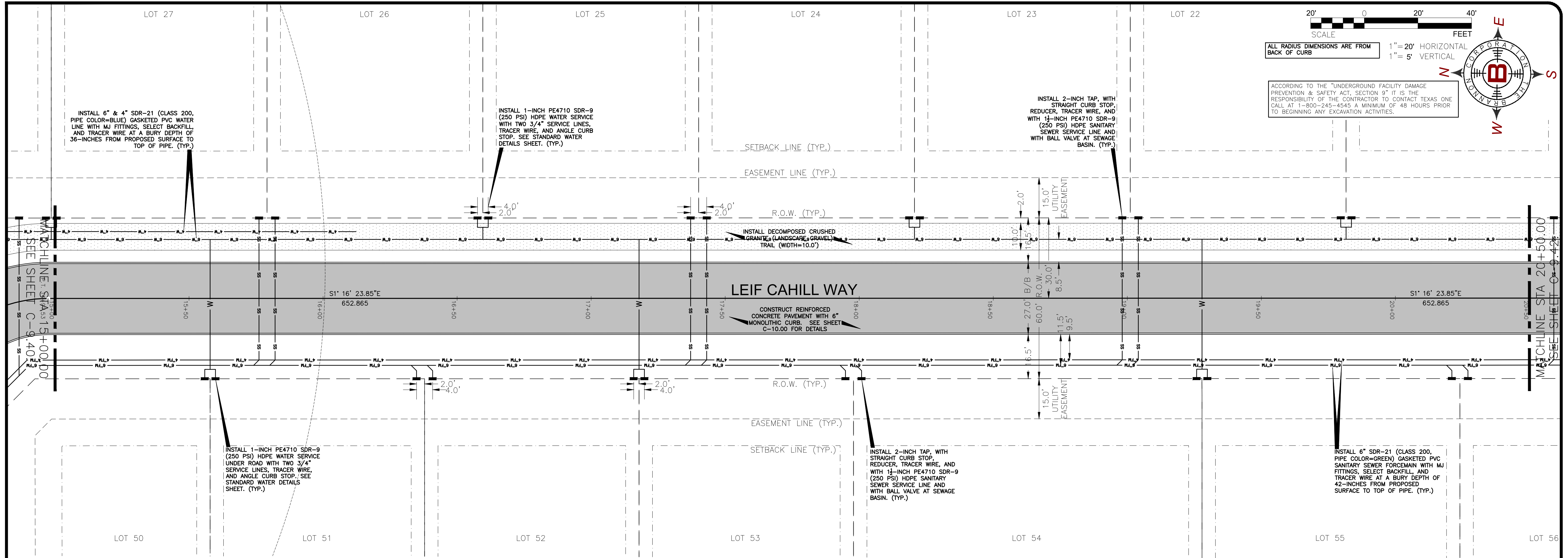
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SHEET NO. **C-9.40**



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 ENGINEERING REGISTRATION NO. FF-262  
 LICENSE EXPIRES 08/31/2023

CONSTRUCTION PLANS  
 FOR  
 LEOS LANDING SUBDIVISION IMPROVEMENTS  
 821 INVESTMENTS, LLC.  
 CANEY CITY, HENDERSON COUNTY, TEXAS

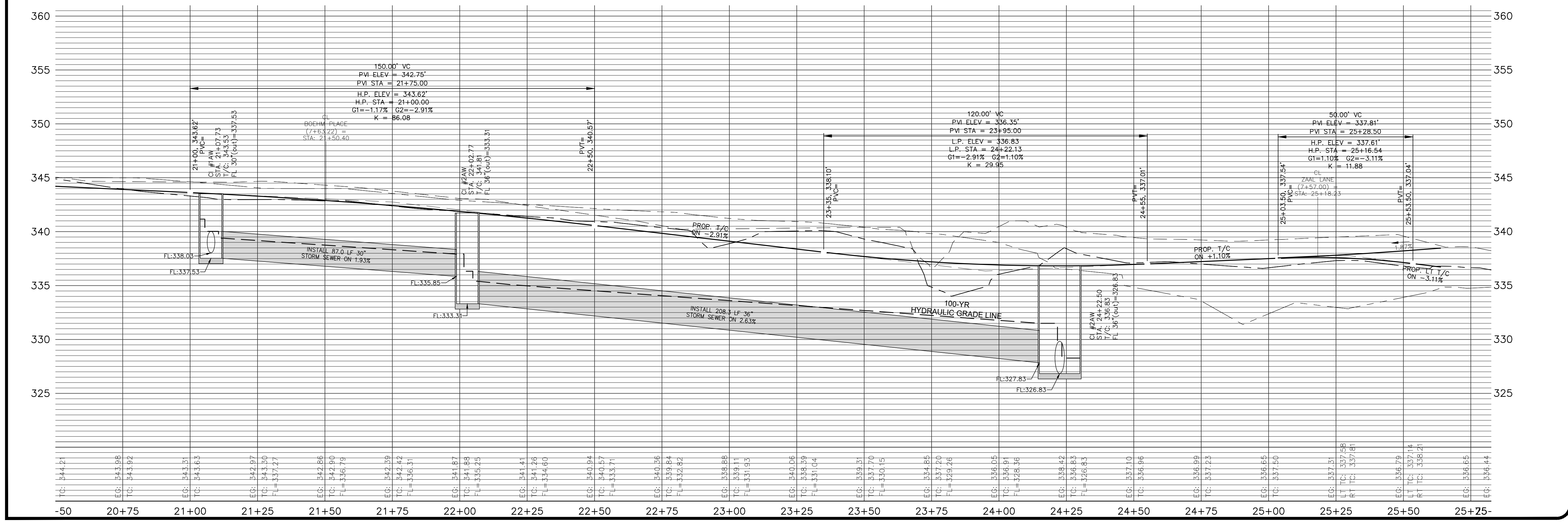
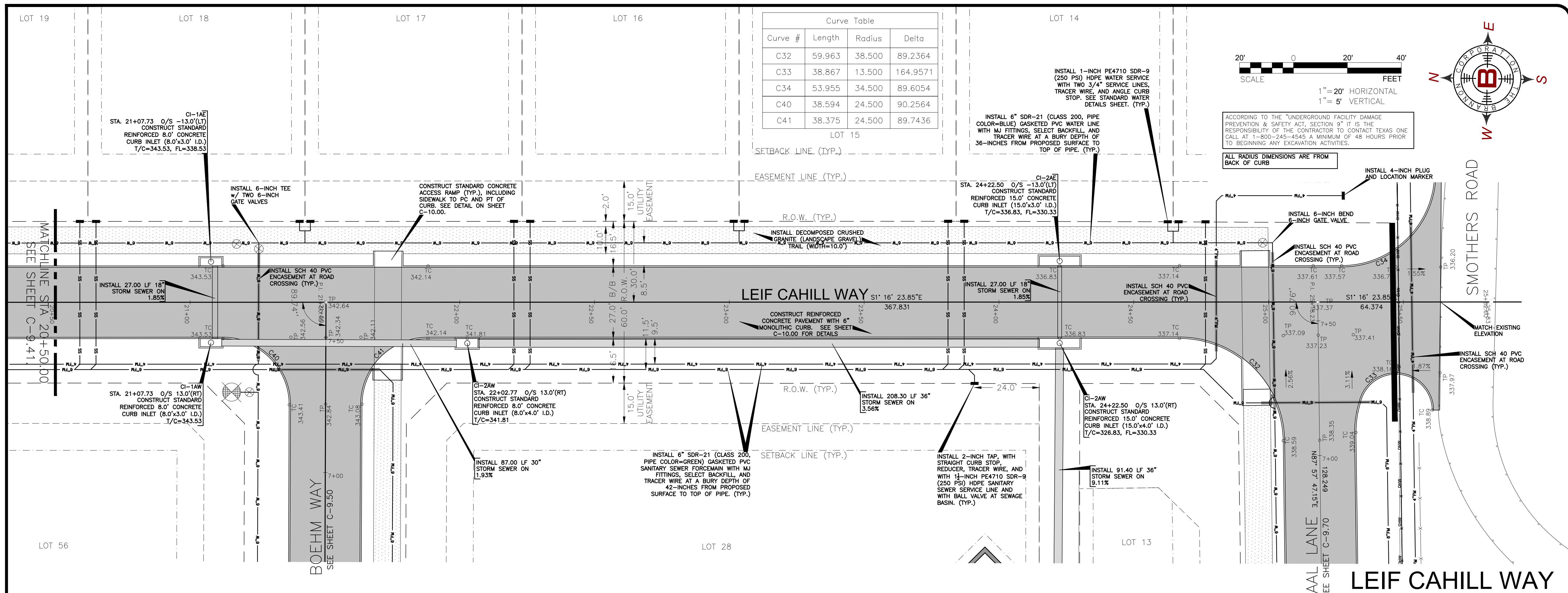
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CONSTRUCTION PLANS  
 FOR  
 LEOS LANDING SUBDIVISION IMPROVEMENTS  
 821 INVESTMENTS, LLC.  
 CANEY CITY, HENDERSON COUNTY, TEXAS

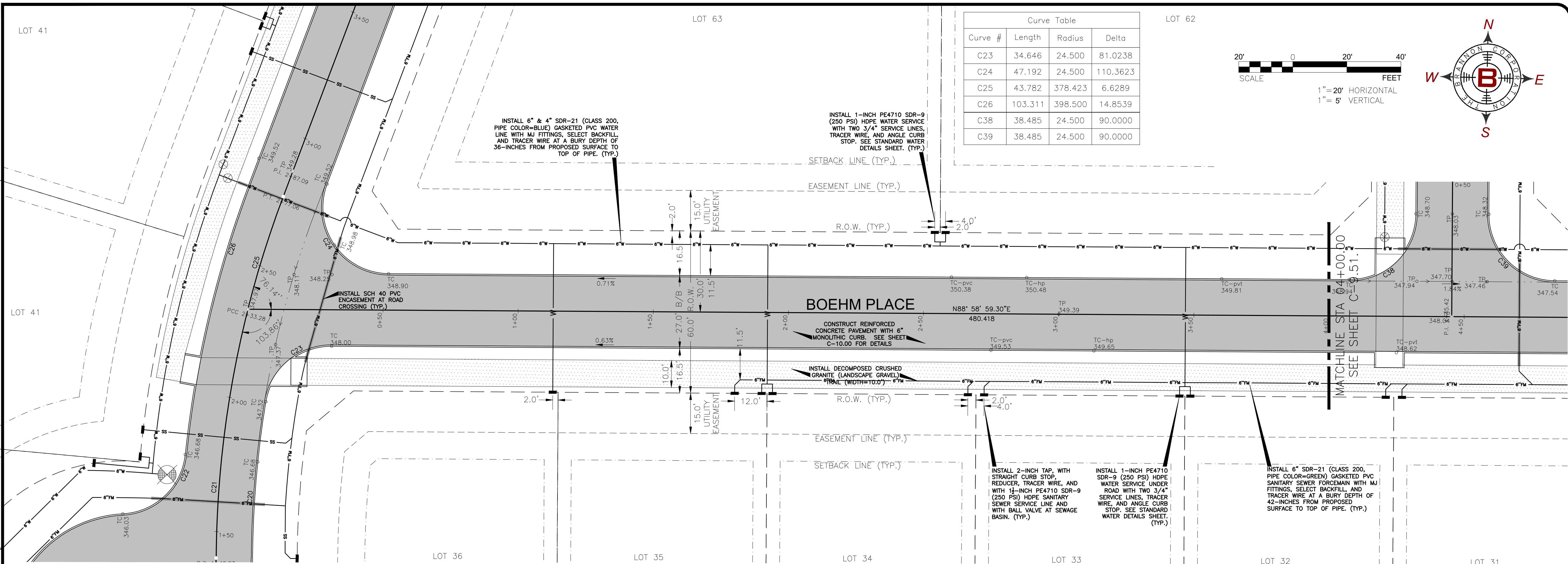
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 22104  
 SHEET NO.  
**C-9.42**

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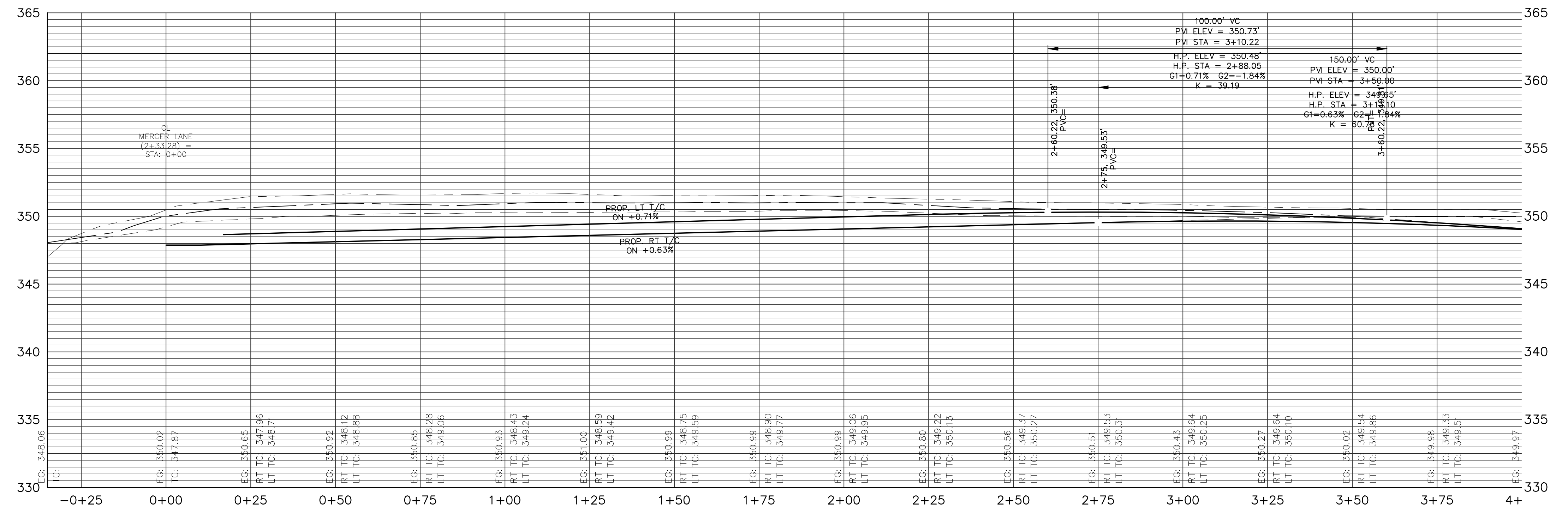
22104-09-04-R&P.dwg



# BOEHM PLACE

ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.



DESIGNED BY: RLB  
DATE: JANUARY 2023

1321 SOUTH BROADWAY  
SUITE 101  
DALLAS, TX 75211  
(972) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
CIVIL ENGINEERING REGISTRATION NO. FF-262  
ISSUED 08/20/2018  
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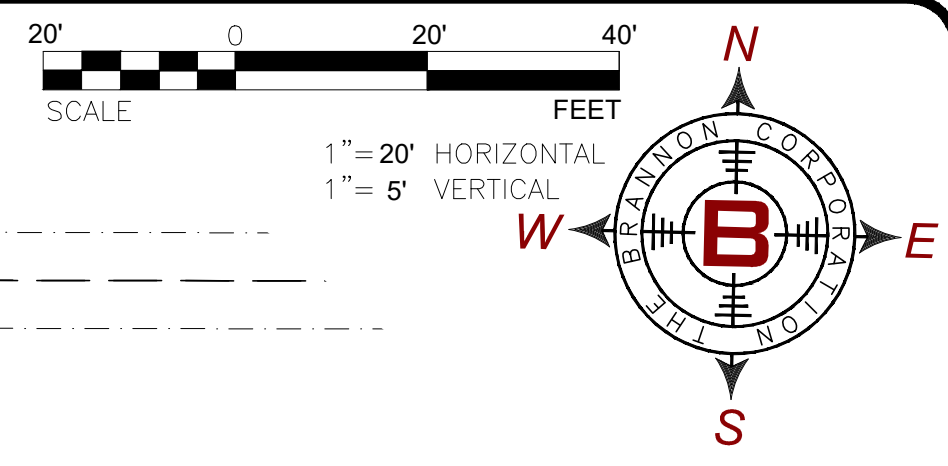
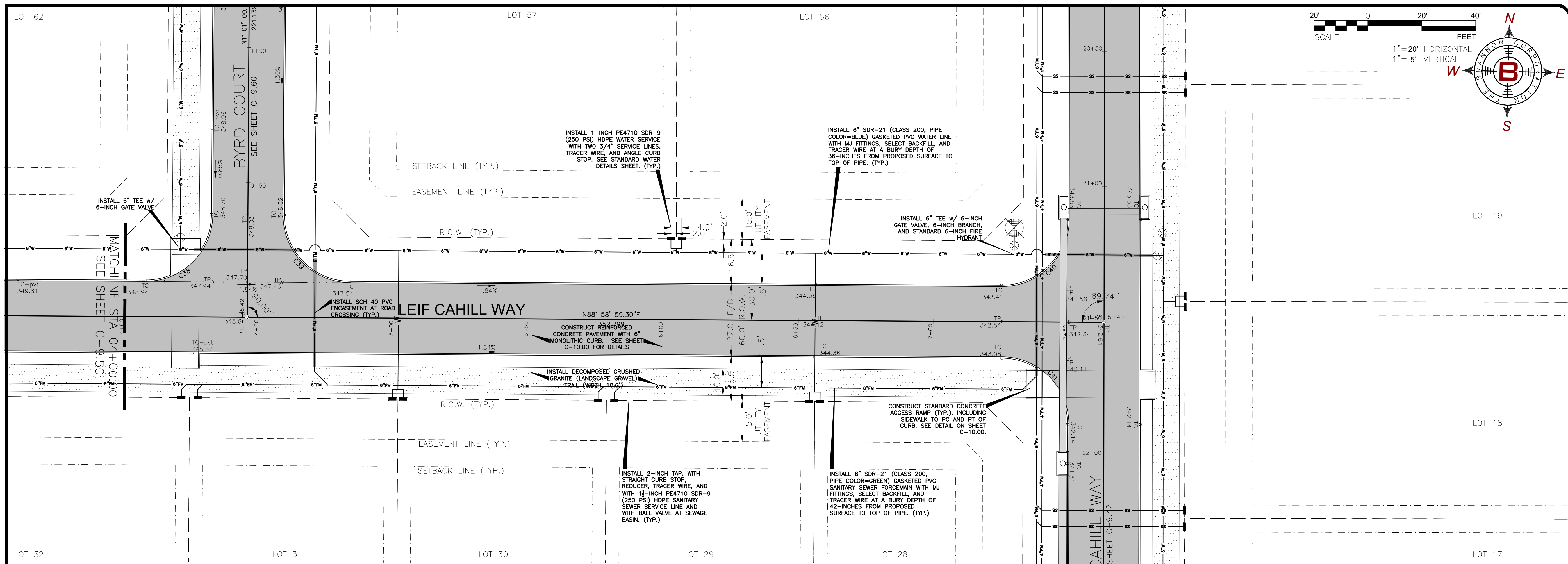
**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

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PROJECT NO. 22104  
SHEET NO. **C-9.50**





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DATE: JANUARY 2023

STATE OF TEXAS  
PRELIMINARY  
02-24-2023  
CIVIL ENGINEER

1321 SOUTH BROADWAY  
SUITE 101  
DALLAS, TEXAS 75201  
(972) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

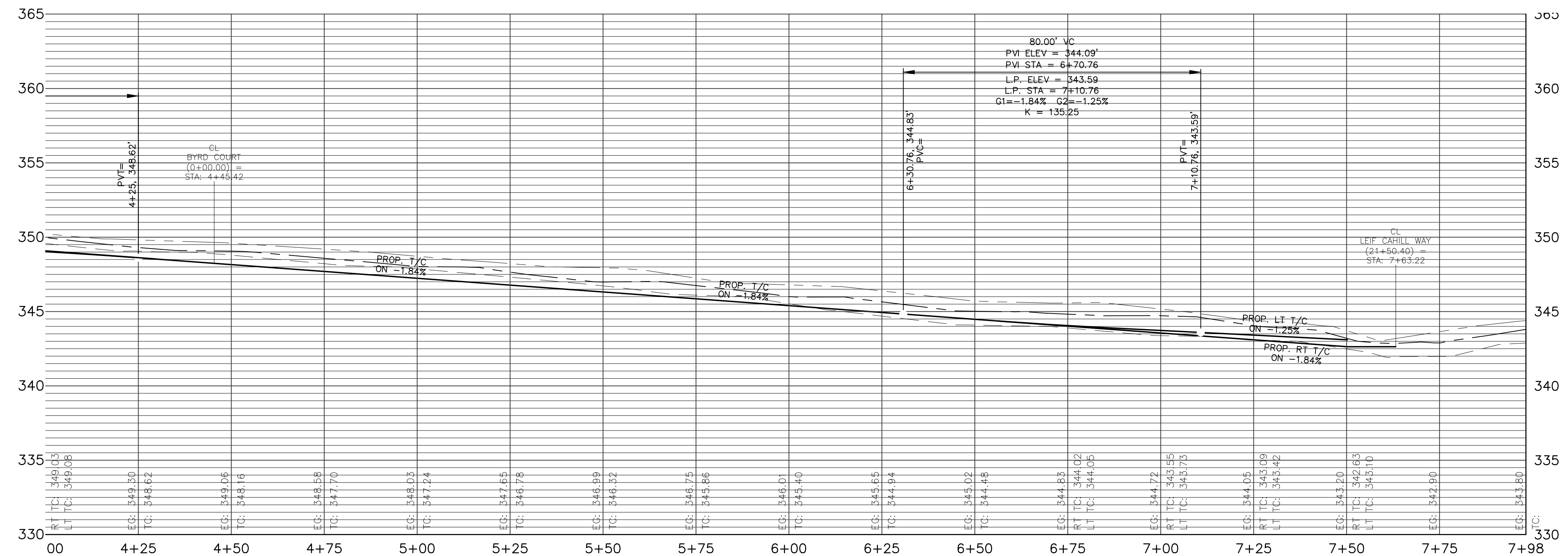
THE C.T. BRANNON CORPORATION  
CIVIL ENGINEER REGISTRATION #F-262  
14468 BRANNON@GMAIL.COM

CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

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PROJECT NO. 22104  
SHEET NO. **C-9.51**

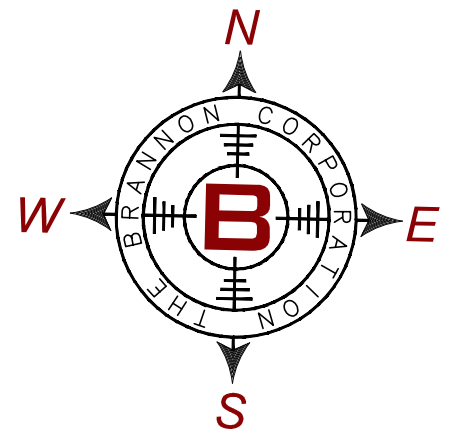
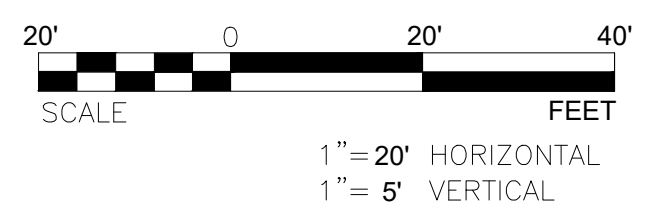
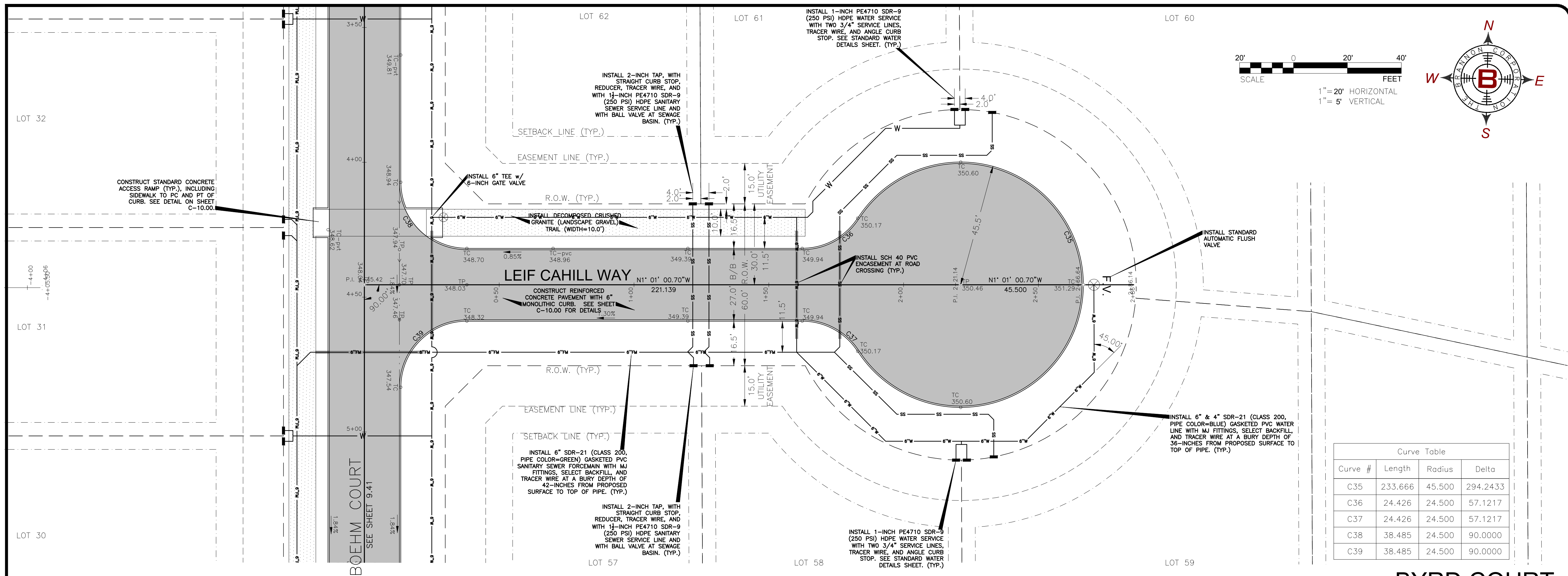


ALL RADIUS DIMENSIONS ARE FROM  
BACK OF CURB

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE  
PREVENTION & SAFETY ACT, SECTION 9" IT IS THE  
RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE  
CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR  
TO BEGINNING ANY EXCAVATION ACTIVITIES.

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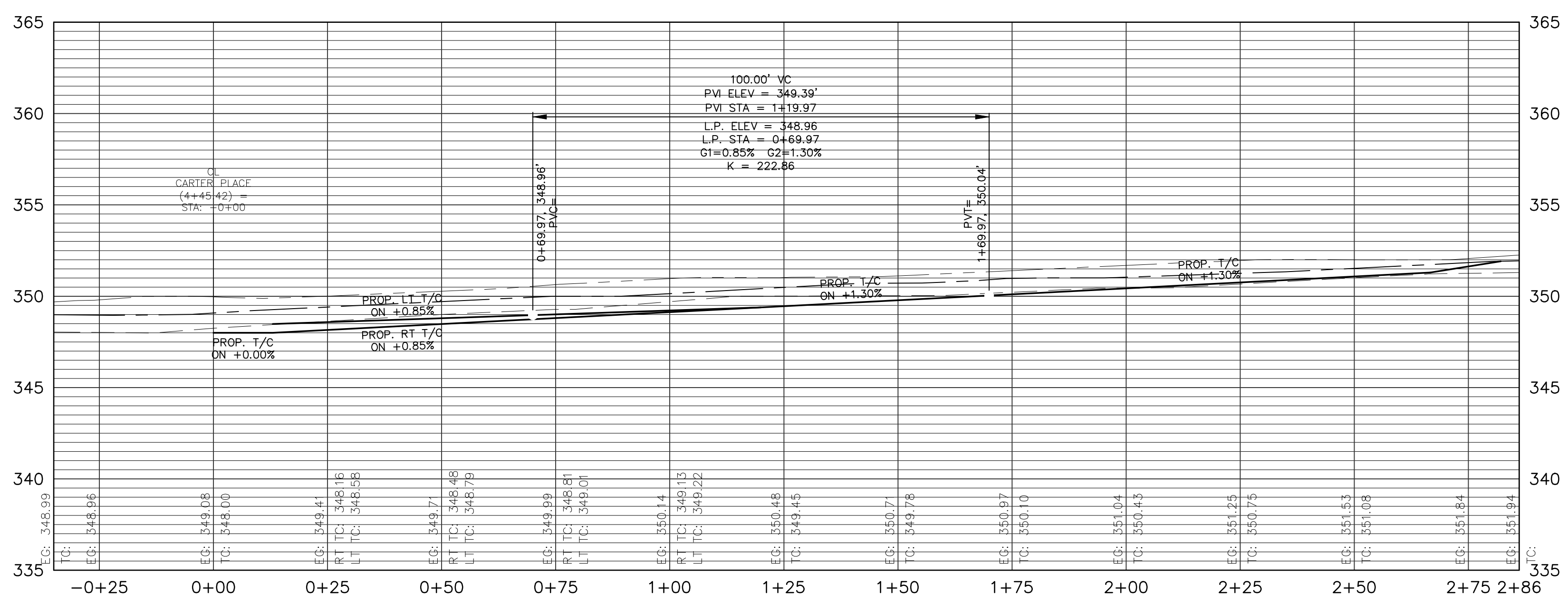
22104-09.0-P&P.dwg



Curve Table			
Curve #	Length	Radius	Delta
C35	233.666	45.500	294.2433
C36	24.426	24.500	57.1217
C37	24.426	24.500	57.1217
C38	38.485	24.500	90.0000
C39	38.485	24.500	90.0000

ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.



DESIGNED BY: RLB  
DATE: JANUARY 2023

PRELIMINARY  
02-24-2023

1321 SOUTH BROADWAY  
SUITE 100  
DALLAS, TEXAS 75211  
(972) 597-2122

**BRANNON CORP**  
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THE C.T. BRANNON CORPORATION  
CIVIL ENGINEERING REGISTRATION #262  
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CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

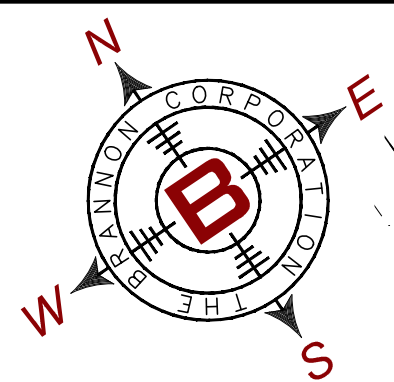
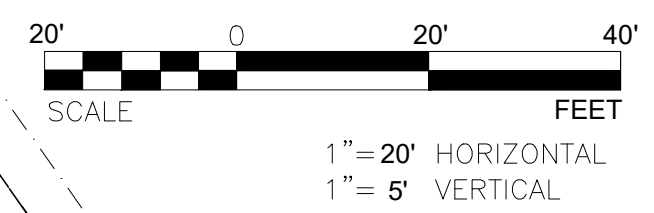
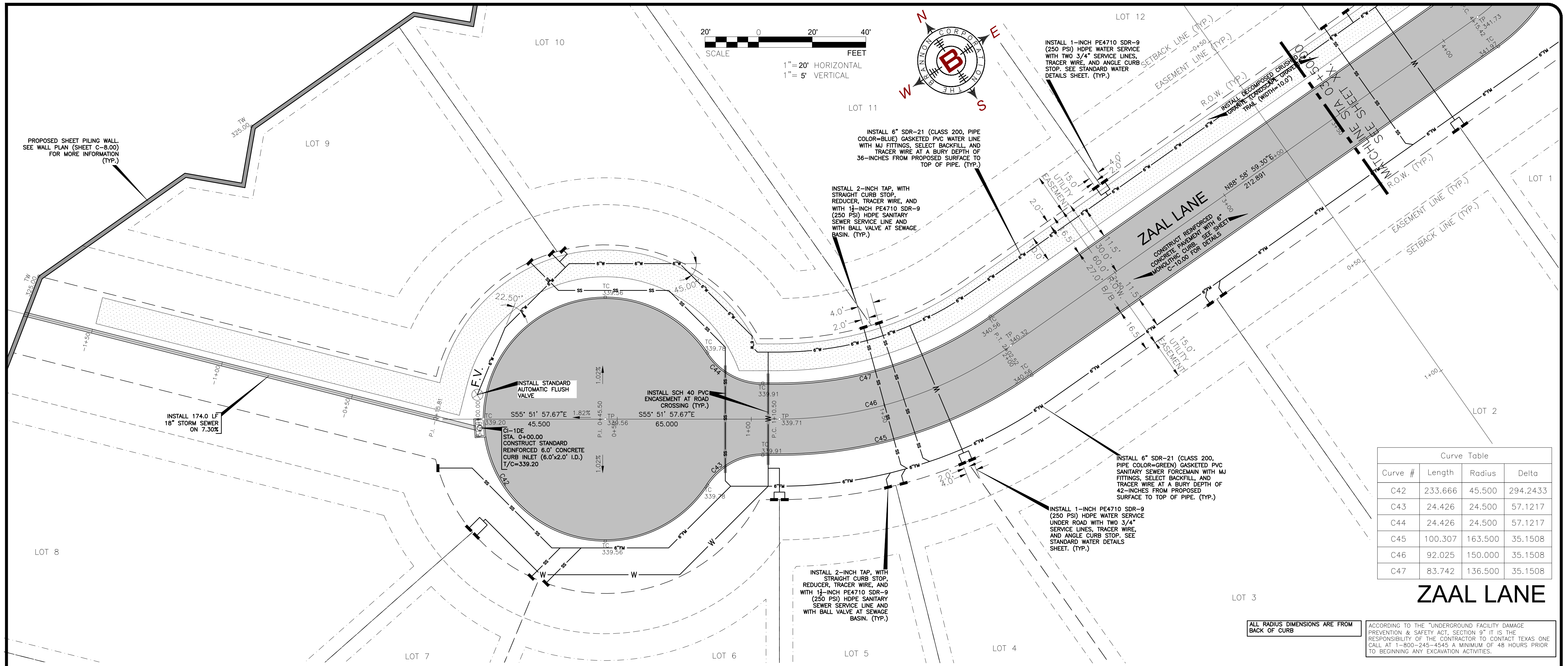
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22104

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**C-9.60**

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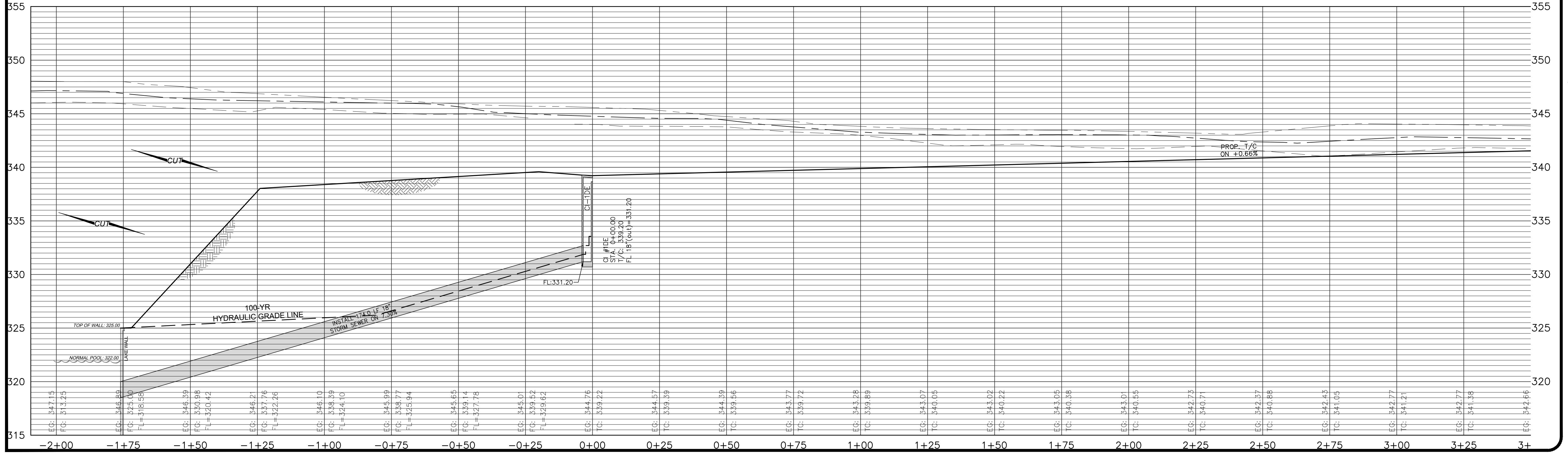


Curve Table			
Curve #	Length	Radius	Delta
C42	233.666	45.500	294.2433
C43	24.426	24.500	57.1217
C44	24.426	24.500	57.1217
C45	100.307	163.500	35.1508
C46	92.025	150.000	35.1508
C47	83.742	136.500	35.1508

**ZAAL LANE**

ALL RADIUS DIMENSIONS ARE FROM BACK OF CURB

ACCORDING TO THE "UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT, SECTION 9" IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT TEXAS ONE CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION ACTIVITIES.



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DATE: JANUARY 2023

1321 SOUTH BROADWAY  
SUITE 100  
HOUSTON, TX 77003  
9597-2122

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CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
MIRP REGISTRATION NO. FF-262  
10466 BRANNON@GMAIL.COM

**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

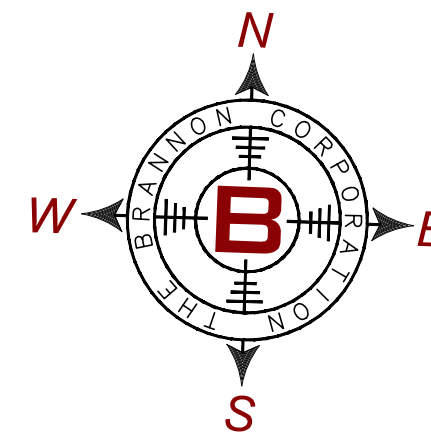
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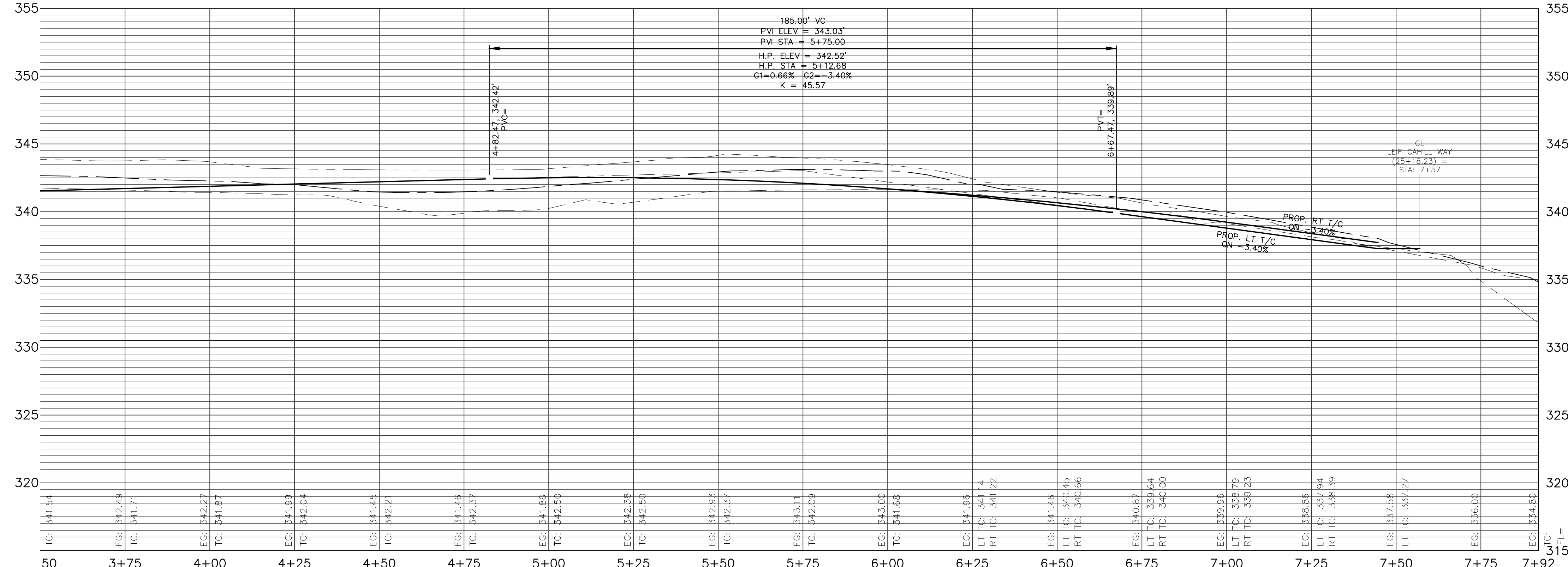
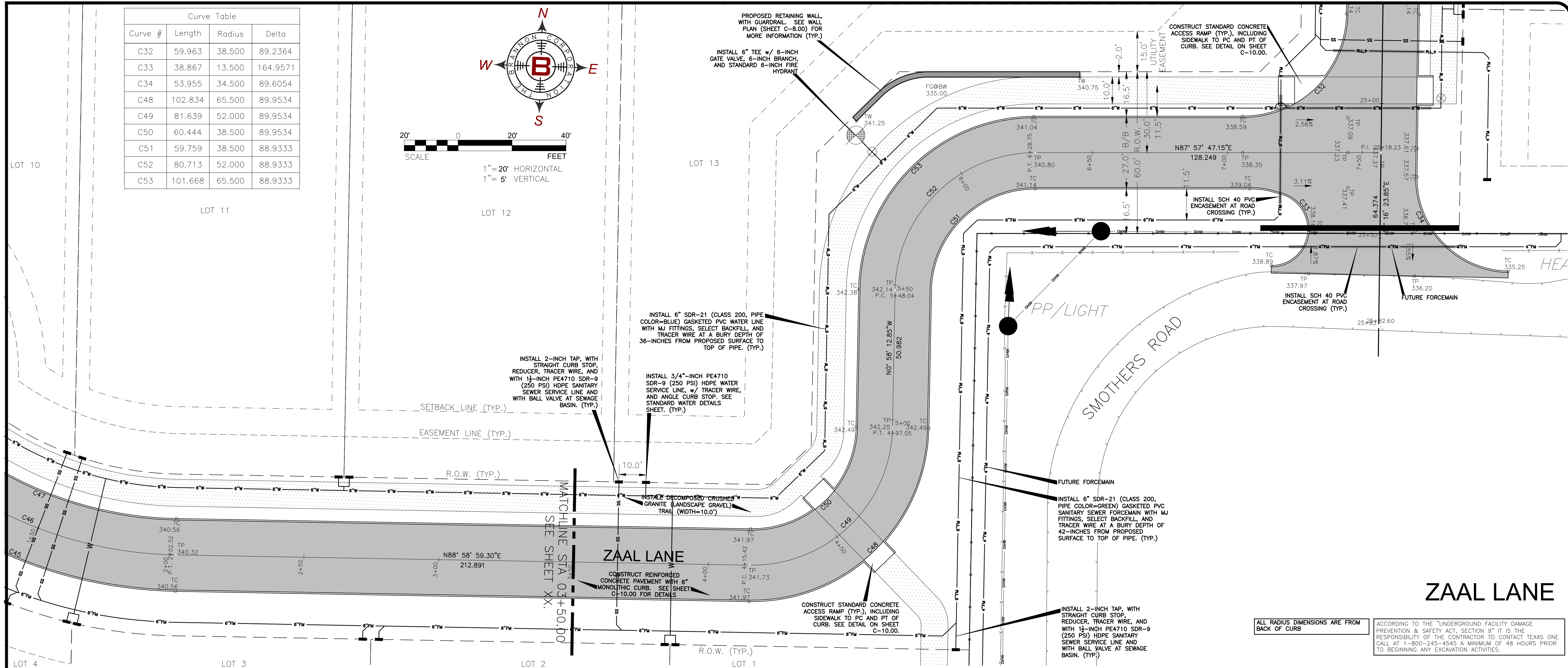
PROJECT NO. 22104  
SHEET NO. **C-9.70**

22104-09-01-R&P.dwg

Curve Table			
Curve #	Length	Radius	Delta
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C33	38.867	13.500	164.9571
C34	53.955	34.500	89.6054
C48	102.834	65.500	89.9534
C49	81.639	52.000	89.9534
C50	60.444	38.500	89.9534
C51	59.759	38.500	88.9333
C52	80.713	52.000	88.9333
C53	101.668	65.500	88.9333



SCALE  
 0 20' 40'  
 FEET  
 1" = 20' HORIZONTAL  
 1" = 5' VERTICAL



DESIGNED BY: RLB  
 DATE: JANUARY 2023

1321 SOUTH BROADWAY  
 SUITE 101  
 HOUSTON, TEXAS 77001  
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**CONSTRUCTION PLANS**  
 FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
 821 INVESTMENTS, LLC.  
 CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

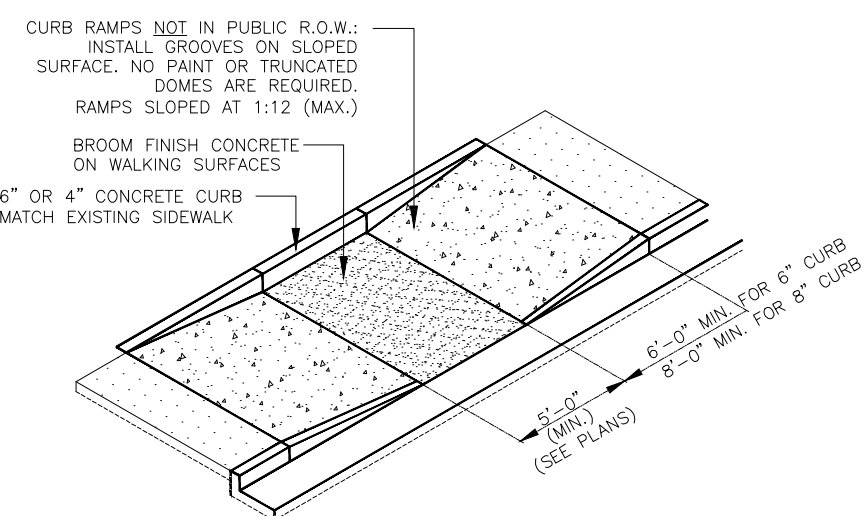
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**REVIEW ONLY**

PROJECT NO.  
 22104

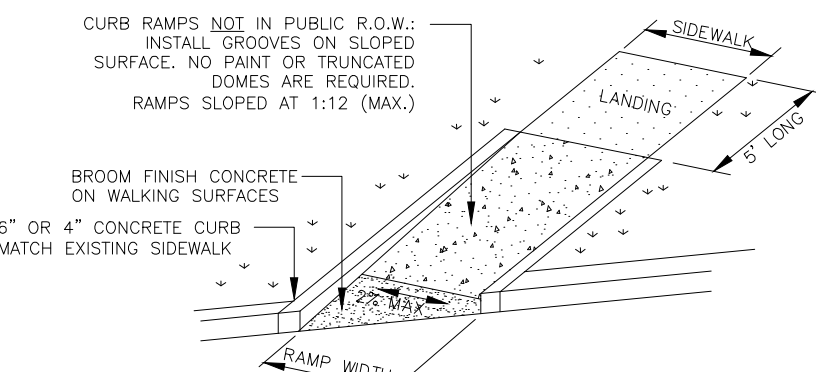
SHEET NO.  
**C-9.71**

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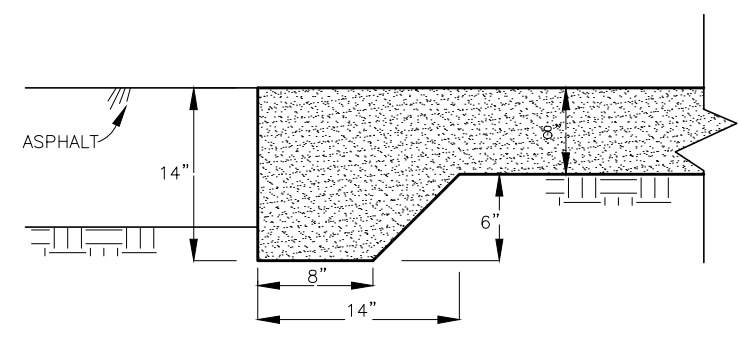
22104-09-01-P&R.dwg



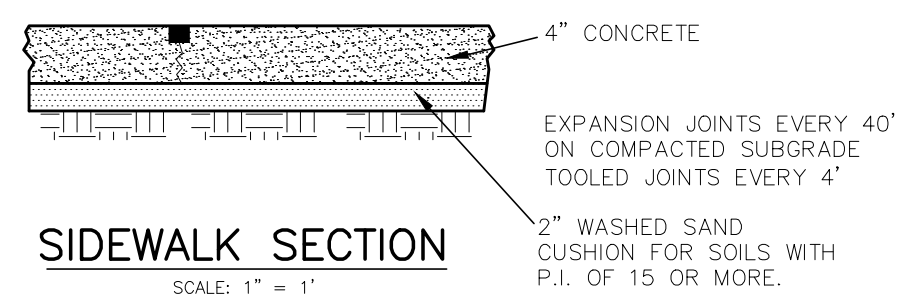
**IN-LINE RAMP DETAIL**  
(NOT IN PUBLIC R.O.W.)  
NOT TO SCALE



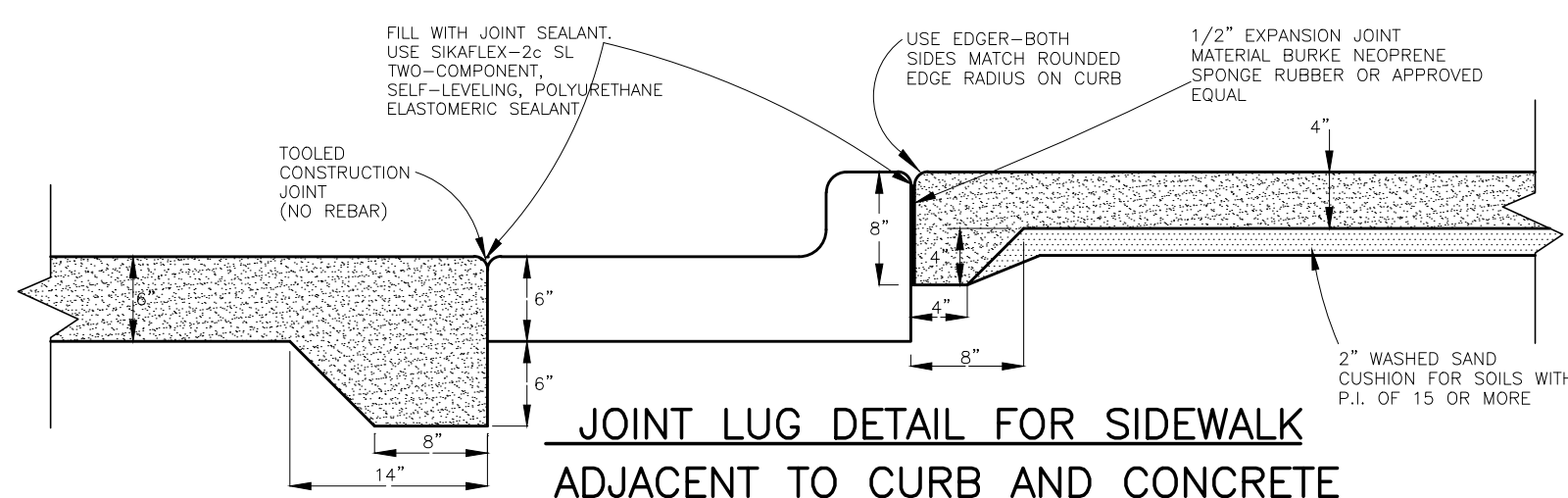
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(NOT IN PUBLIC R.O.W.)  
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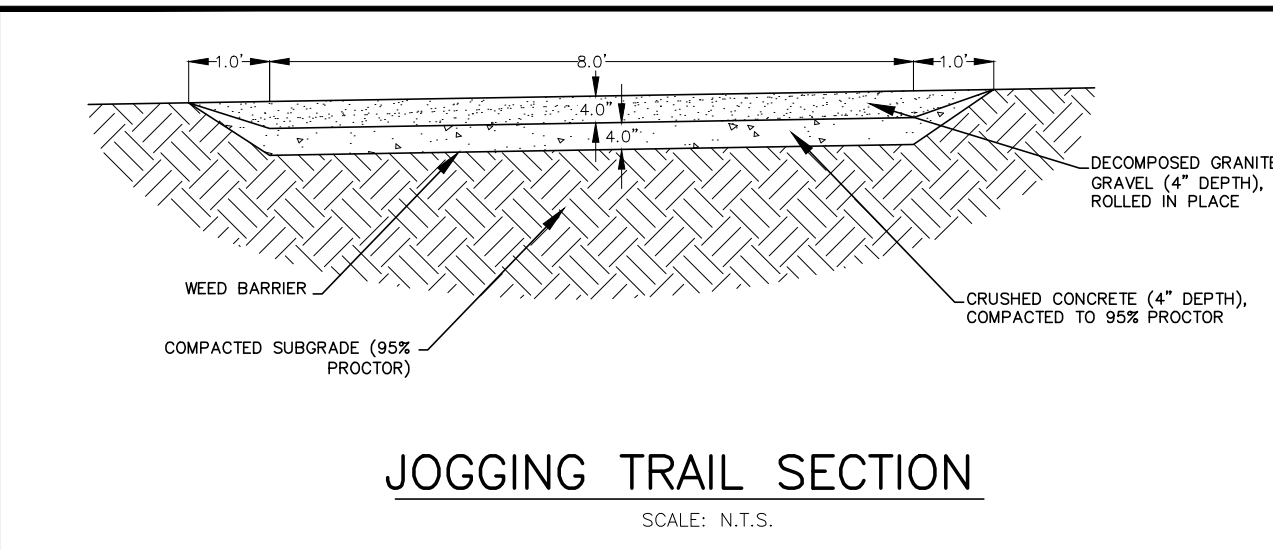
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SCALE: 1" = 1"



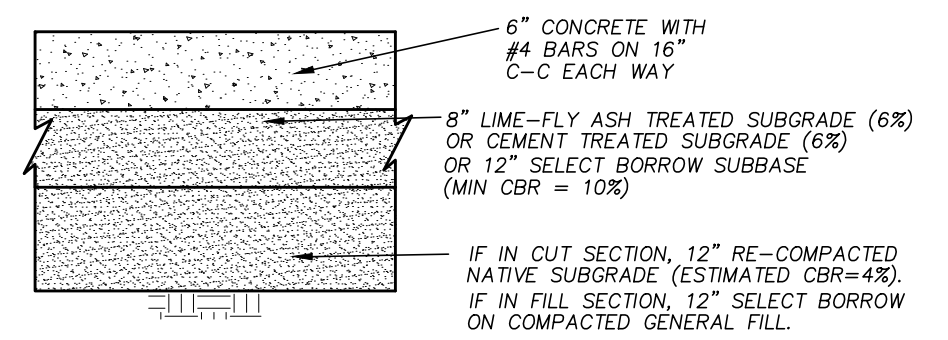
**SIDEWALK SECTION**  
SCALE: 1" = 1"



**JOINT LUG DETAIL FOR SIDEWALK  
ADJACENT TO CURB AND CONCRETE  
PAVEMENT ADJACENT TO CURB**  
SCALE: 1" = 1"



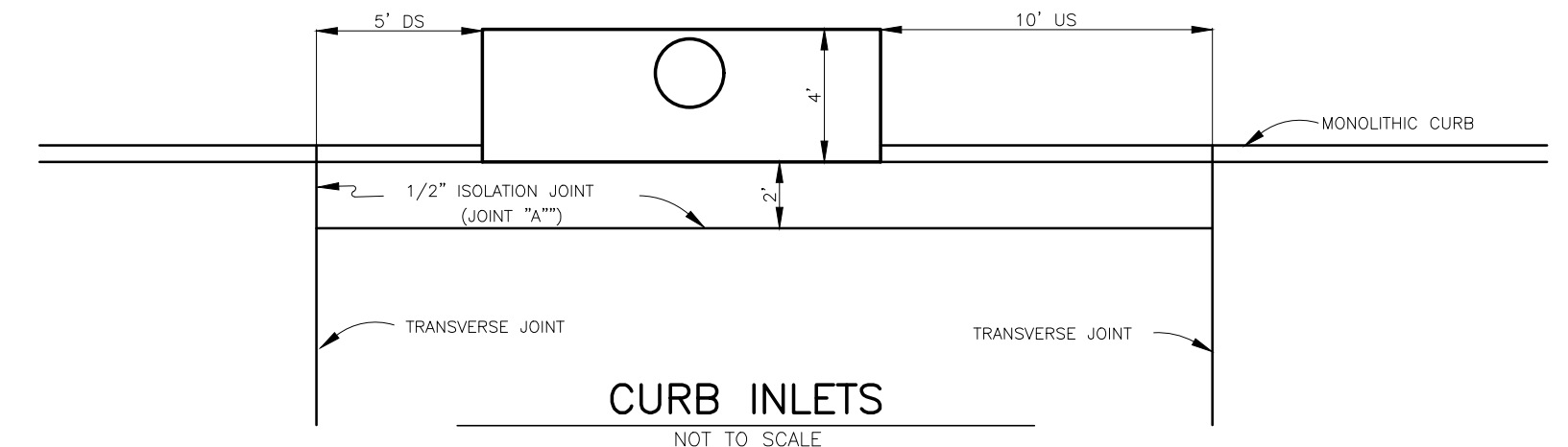
**JOGGING TRAIL SECTION**  
SCALE: N.T.S.



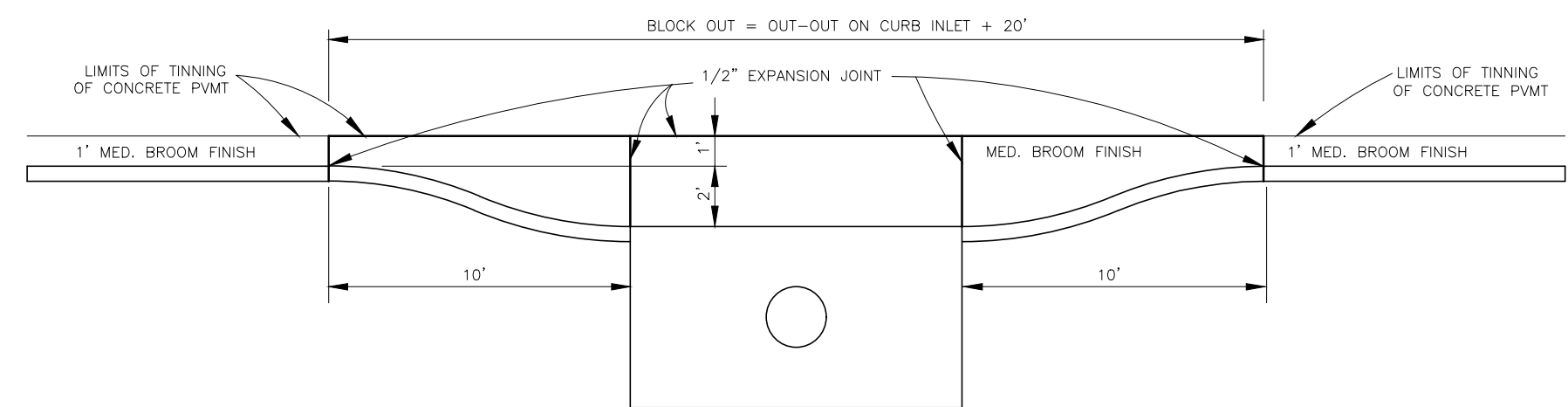
**TYPICAL MEDIUM DUTY  
CONCRETE PAVEMENT SECTION**  
SCALE: NTS

GENERAL NOTE:

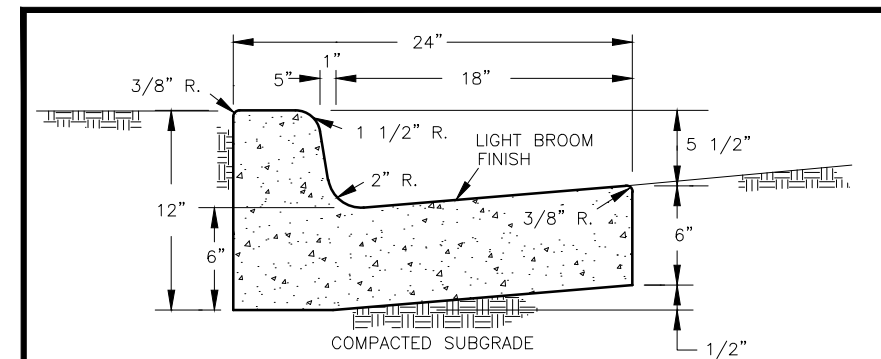
SUBBASE MATERIAL (SELECT BORROW) CAN BE NATIVE MATERIAL IF MATERIAL IS DRY AND MEETS SELECT BORROW REQUIREMENTS. SUBBASE SHALL BE COMPACTED TO A DENSITY OF 95% OF STANDARD PROCTOR (ASTM D 698) AT OPTIMUM MOISTURE.  
CLAY SUBGRADE MATERIAL SHALL BE COMPACTED TO A DENSITY OF 95% OF STANDARD PROCTOR (ASTM D 698) AT OPTIMUM MOISTURE.  
SAND SUBGRADE MATERIAL SHALL BE COMPACTED TO A DENSITY OF 100% OF STANDARD PROCTOR (ASTM D 698) AT OPTIMUM MOISTURE.



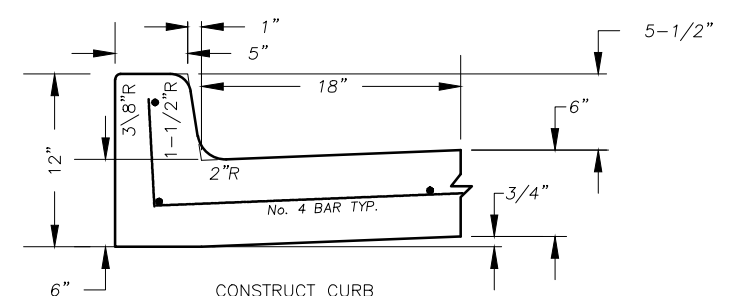
**CURB INLETS**  
NOT TO SCALE



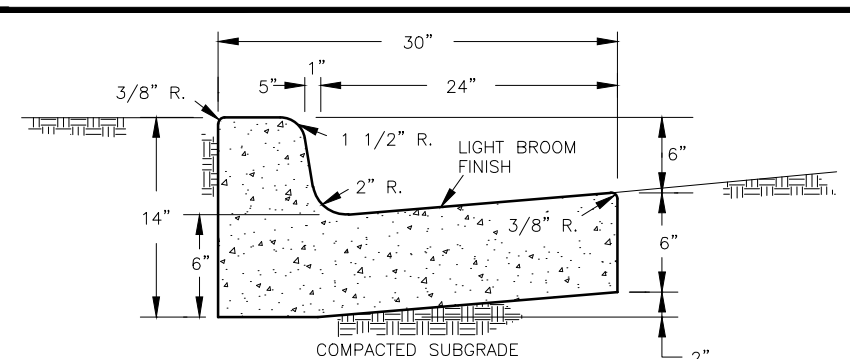
**REQUIRED BLOCK-OUT/EXP. JOINT FOR RECESSED CURB INLETS**  
NOT TO SCALE



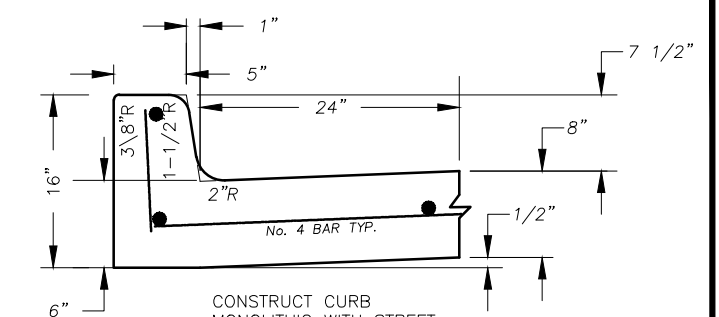
**STANDARD  
6\"/>**



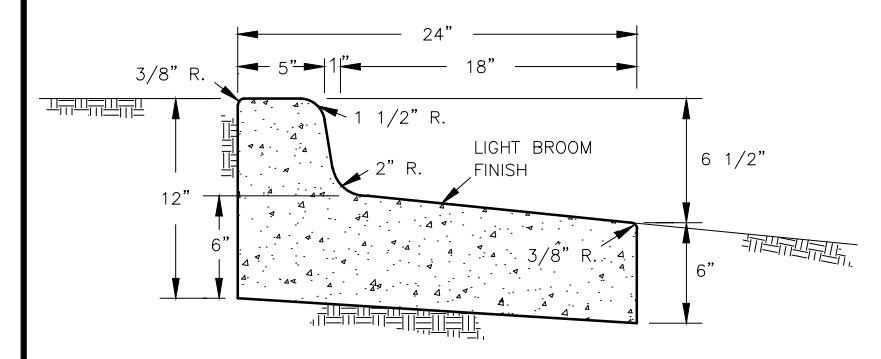
**STANDARD MONOLITHIC  
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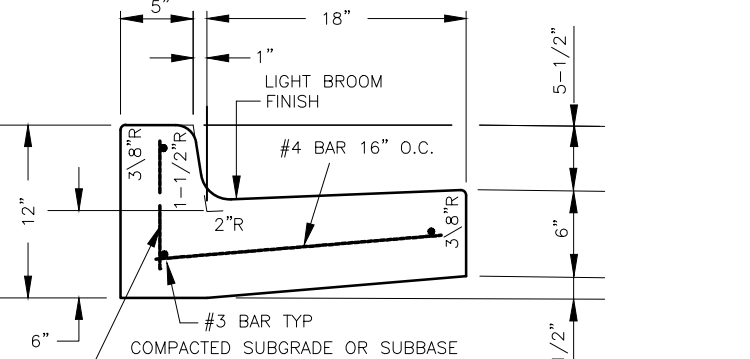
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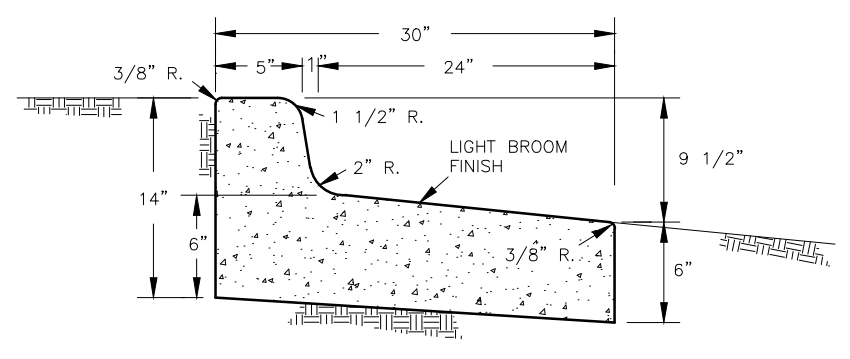
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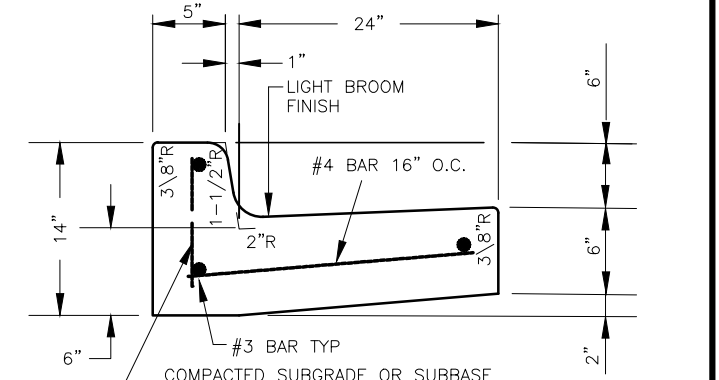
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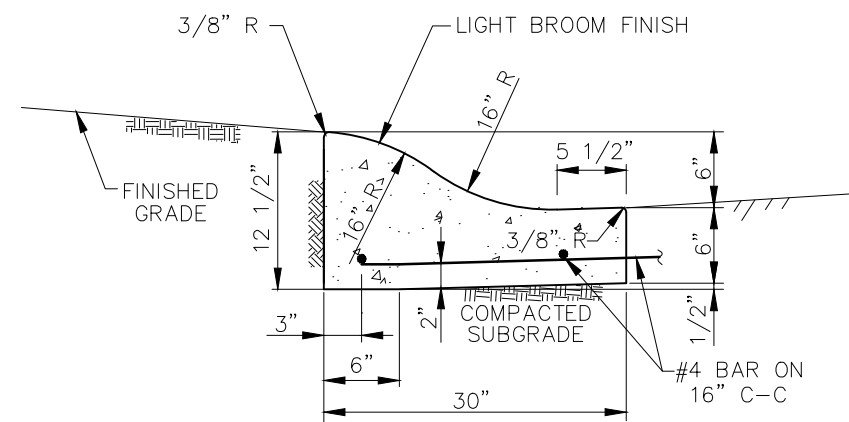
**STANDARD 6\"/>**



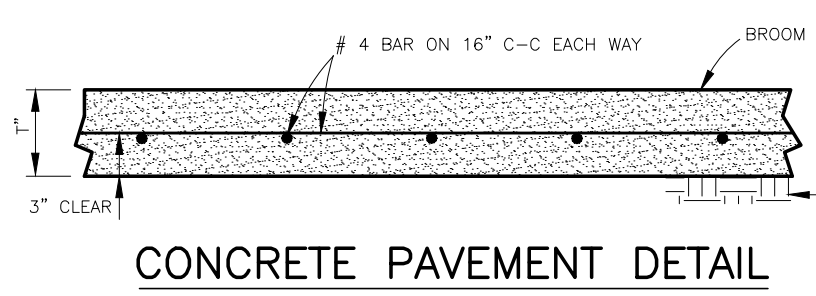
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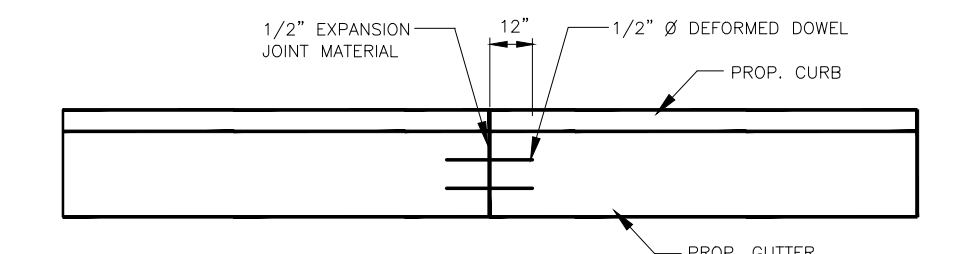
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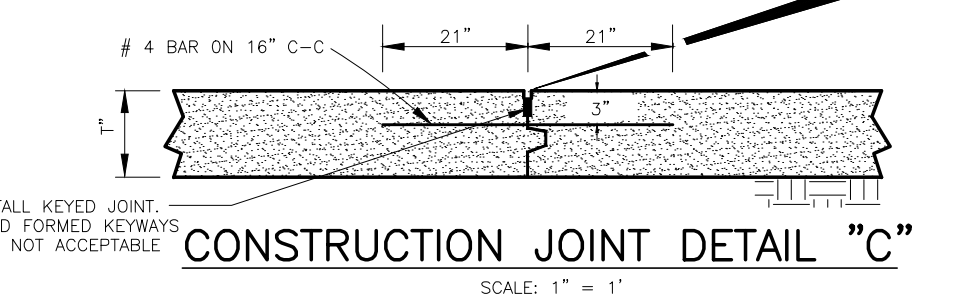
**CONCRETE LAYDOWN  
CURB & GUTTER**  
SCALE: NONE



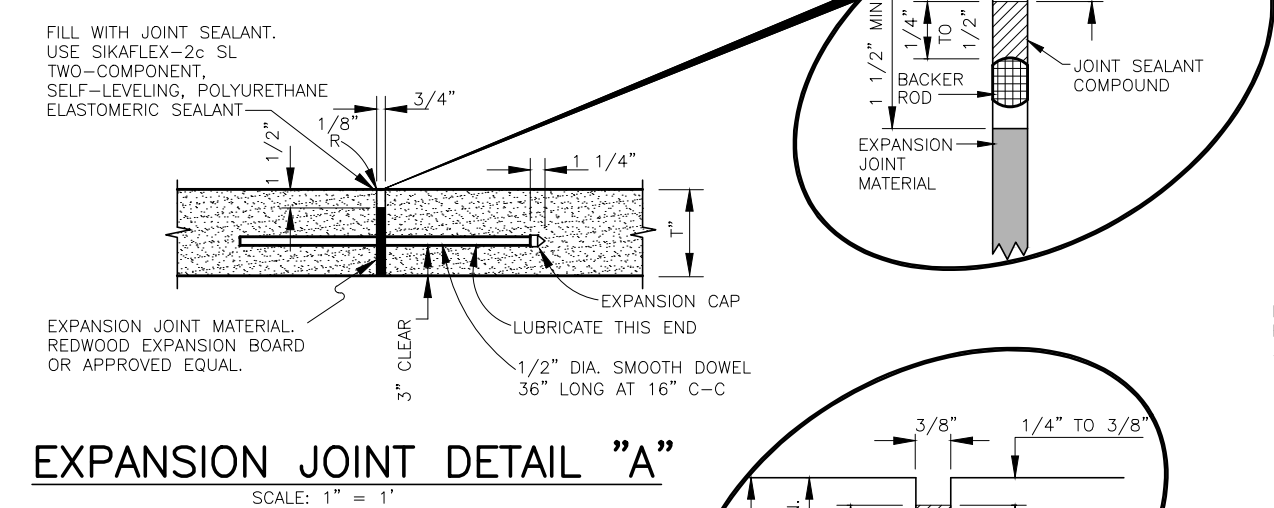
**CONCRETE PAVEMENT DETAIL**  
SCALE: 1" = 1"



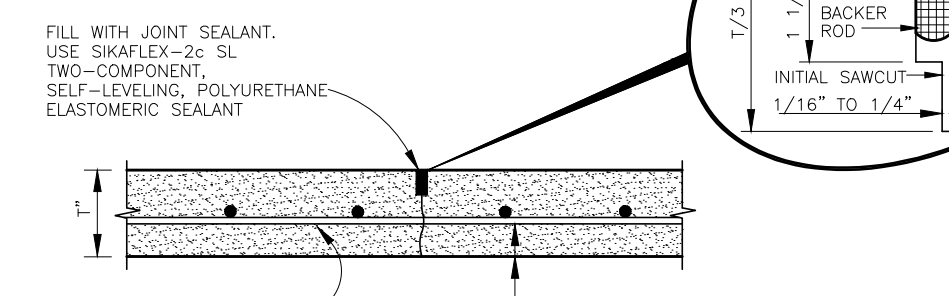
**CURB & GUTTER EXPANSION JOINT DETAIL**  
N.T.S.



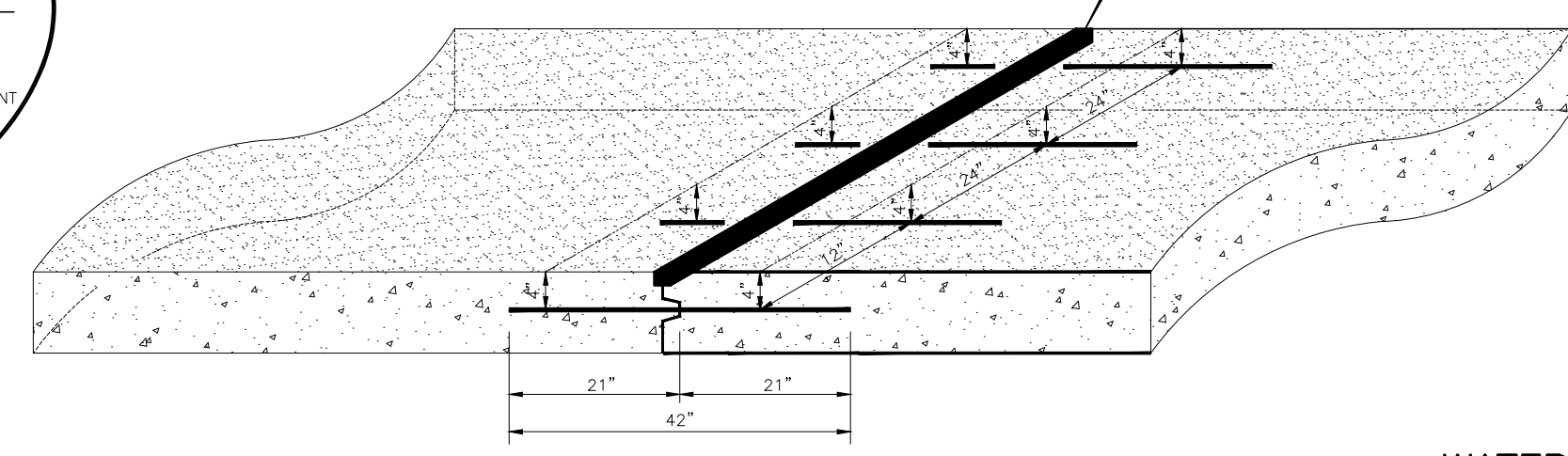
**CONSTRUCTION JOINT DETAIL "C"**  
SCALE: 1" = 1"



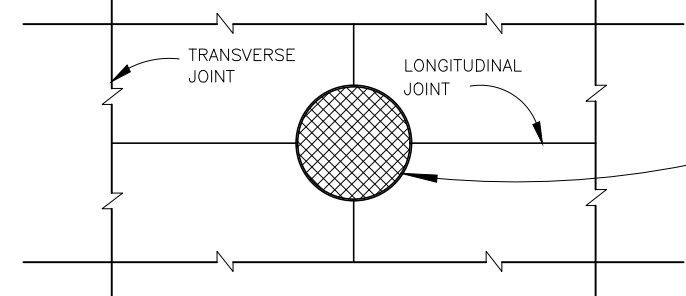
**EXPANSION JOINT DETAIL "A"**  
SCALE: 1" = 1"



**TRANSVERSE SAWED CONTRACTION JOINT  
DETAIL "B"**  
SCALE: 1" = 1"



**LONGITUDINAL CONSTRUCTION JOINT DETAIL "D"**  
NOT TO SCALE



**WATER VALVE & CLEANOUT COVERS**  
NOT TO SCALE

CONCRETE GENERAL NOTES:

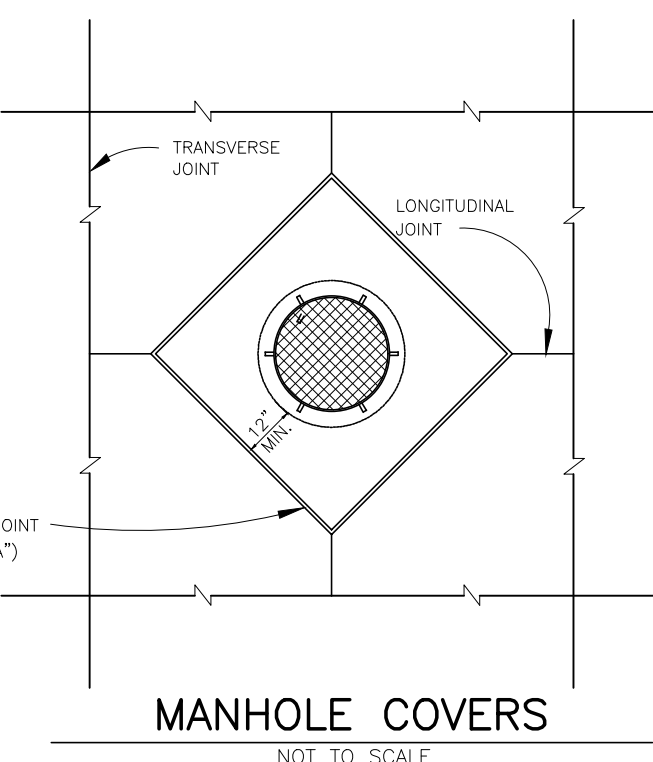
- CONCRETE FOR DRIVEWAYS, SIDEWALKS AND CURB & GUTTER SHALL BE CLASS "A" CONCRETE AND HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAY (MINIMUM).
- CONCRETE FOR PARKING LOT AND PRIVATE DRIVE PAVING SHALL BE CLASS "C" CONCRETE AND HAVE A COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAY (MINIMUM).
- CONCRETE FOR VALLEY GUTTERS SHALL BE CLASS "S" CONCRETE AND HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAY (MINIMUM).
- CONCRETE FOR STREET PAVING SHALL BE CLASS "P" CONCRETE AND HAVE A COMPRESSIVE STRENGTH OF 4400 PSI AT 28 DAY (MINIMUM).
- ALL CONCRETE SHALL BE CURED ACCORDING TO TxDOT STANDARD SPECIFICATIONS AND MUST BE VERIFIED (MEMBRANE CURING, POLYETHYLENE, ETC.) AT TIME OF INSPECTION.
- ALL CONCRETE EDGES NOT CHAMFERED SHALL BE TOOLED.
- ALL REINFORCING STEEL SHALL BE SUPPORTED BY CHAIRS.
- ALL CONSTRUCTION JOINTS ARE TO BE CUT TO A DEPTH OF 1/3 THICKNESS OF THE CONCRETE.
- ALL CONCRETE SHALL BE COMPACTED TO A DENSITY OF 95% OF STANDARD PROCTOR AT OPTIMUM MOISTURE (ASTM D 698) (WATER STANDING, MUDDY SUBGRADE, OIL DIRT, SUGAR SAND OR UNSTABLE MATERIAL WILL BE REJECTED).
- ANY STREET PAVEMENT DAMAGED DURING DRIVEWAY CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR.
- ALL CURB & GUTTER SHALL HAVE 1/2" EXPANSION JOINT ON 90' CENTERS WITH CONTRACTION JOINTS ON 15' CENTERS. (SEE CURB & GUTTER EXPANSION JOINT DETAIL)

NOTES FOR NEW JOINTS:

- INSTALL PROPER WIDTH EXPANSION JOINT MATERIAL.
- PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL PREPARE A SUBMITTAL SHOWING SEALANT MANUFACTURER, BACKER ROD, RECOMMENDED EQUIPMENT, AND INSTALLATION PROCEDURES TO BE USED.
- INSTALL 20'-FT. LONG TEST STRIP.
- REMOVE FILLER TO PROPER DEPTH.
- CLEAN NEW JOINT BY WIRE BRUSH OR SANDBLASTING, IN ACCORDANCE TO SEALANT MANUFACTURER'S REQUIREMENTS.
- BLOW JOINT CLEAN AND DRY BY AIR.
- INSTALL CLOSED CELL BACKER ROD AT PROPER DEPTH.
- ALLOW 7 DAYS CONCRETE CURING BEFORE INSTALLING JOINT SEALANT. ALLOW 28 DAYS DURING COLD WEATHER.
- INSTALL JOINT SEALANT TO PROPER DEPTH.
- A TWO YEAR WARRANTY IS REQUIRED.
- REFER TO THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CONSTRUCTION JOINTS SHALL BE SAWS AS SOON AS POSSIBLE WITHOUT CAUSING DAMAGE TO THE PAVEMENT.
- UNLESS SHOWN OTHERWISE, CONTRACTION JOINTS SHALL BE INSTALLED AT 15' INTERVALS, EACH WAY, AND AT STRUCTURES.
- EXPANSION JOINTS SHALL BE INSTALLED AT 300' INTERVALS, AND AT P.C. AND P.T. AND AT END OF RADI.
- THE THICKNESS OF THE CONCRETE IS SHOWN AS "T"-INCHES.
- "T"-INCHES FOR EACH PAVEMENT SECTION REFERENCED ON THE SITE PLAN IS SHOWN ON THIS SHEET UNDER PAVEMENT SECTIONS.

NOTES FOR MAINTENANCE OF EXISTING JOINTS:

- PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL PREPARE A SUBMITTAL SHOWING SEALANT MANUFACTURER, BACKER ROD, RECOMMENDED EQUIPMENT, AND INSTALLATION PROCEDURES TO BE USED.
- INSTALL 20'-FT. LONG TEST STRIP.
- REMOVE EXISTING FILLER TO PROPER DEPTH.
- CLEAN EXISTING JOINT BY WIRE BRUSH, DIAMOND BLADE GRINDER, OR SANDBLASTING, IN ACCORDANCE TO SEALANT MANUFACTURER'S REQUIREMENTS.
- CLEAN OR ROUTE EXISTING JOINT TO PROPER DEPTH.
- BLOW JOINT CLEAN AND DRY BY AIR.
- INSTALL CLOSED CELL BACKER ROD AT PROPER DEPTH.
- INSTALL JOINT SEALANT TO PROPER DEPTH.
- A TWO YEAR WARRANTY IS REQUIRED.
- REFER TO THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.



**MANHOLE COVERS**  
NOT TO SCALE

**STANDARD COMMERCIAL PAVING DETAILS**

DESIGNED BY: RLB  
DATE: JANUARY 2023  
PRELIMINARY  
02-24-2023

1321 SOUTH BROADWAY  
SUITE 100  
DALLAS, TEXAS 75211  
(972) 597-2122  
**BRANNON CORP**  
CIVIL ENGINEERS  
THE C.T. BRANNON CORPORATION  
LAW REGISTRATION NO. FF-242  
LAW REGISTRATION NO. FF-242

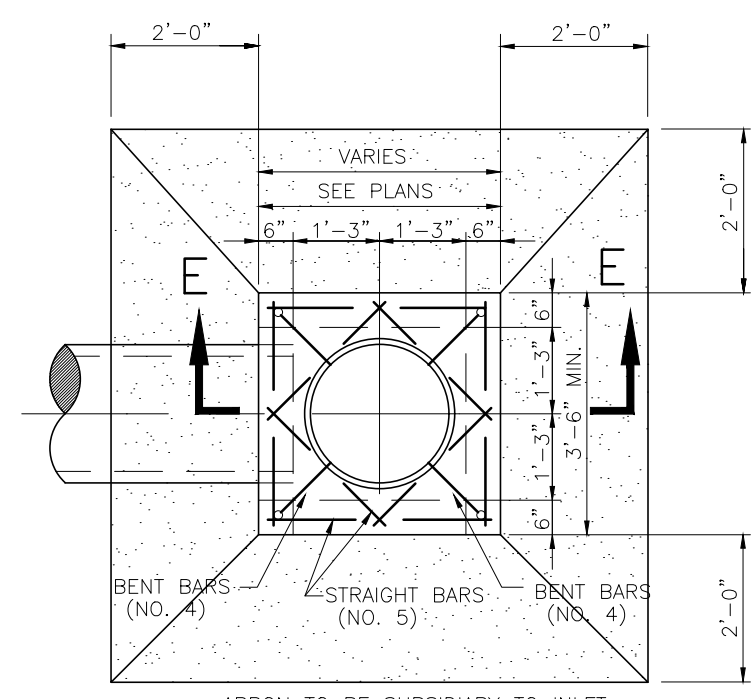
CONSTRUCTION PLANS  
FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

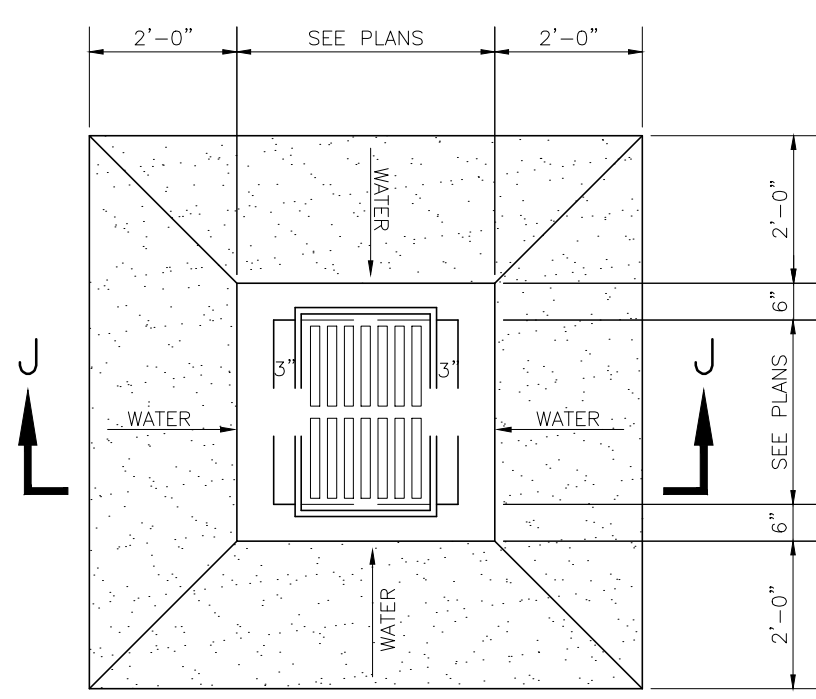
ISSUED FOR:  
**PRELIMINARY  
FOR  
REVIEW ONLY**

PROJECT NO. 22104  
SHEET NO. **C-10.00**

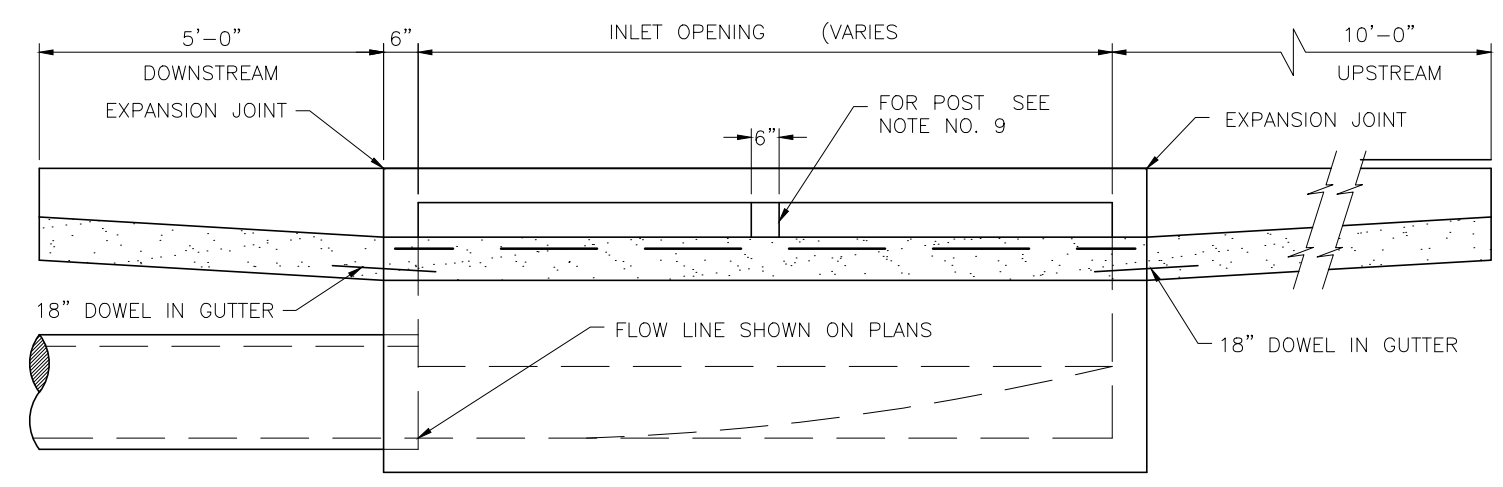
22104-10.0-Standard Commercial Paving Details.dwg



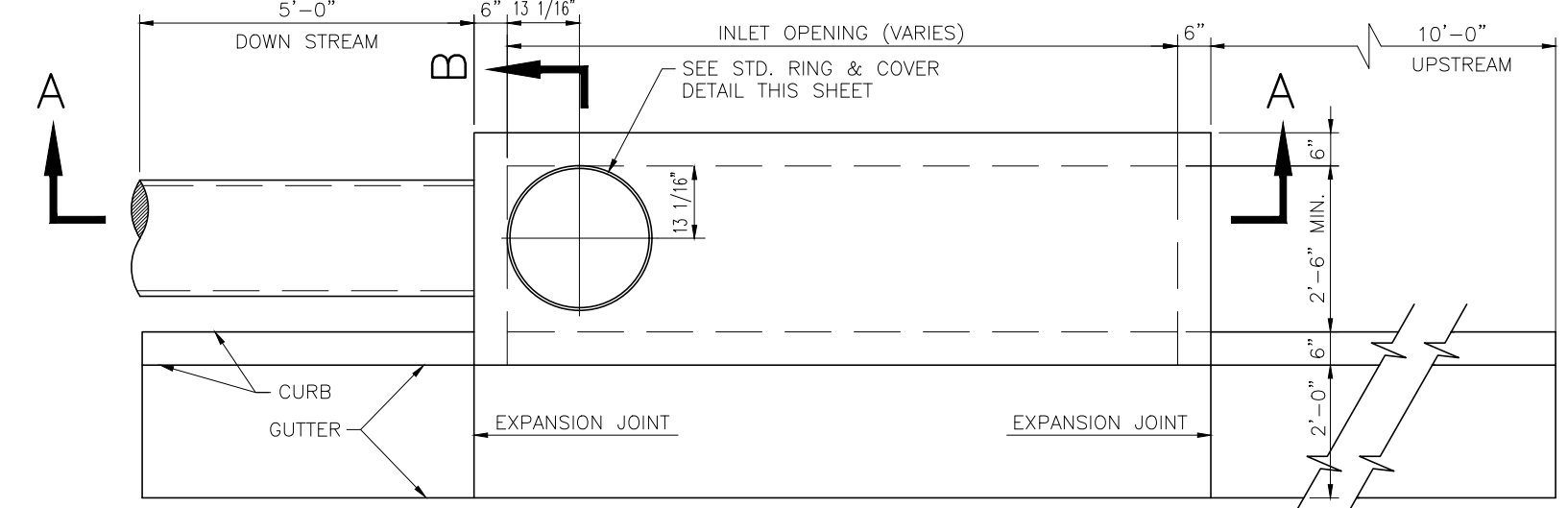
PLAN TYPE "Y" INLET



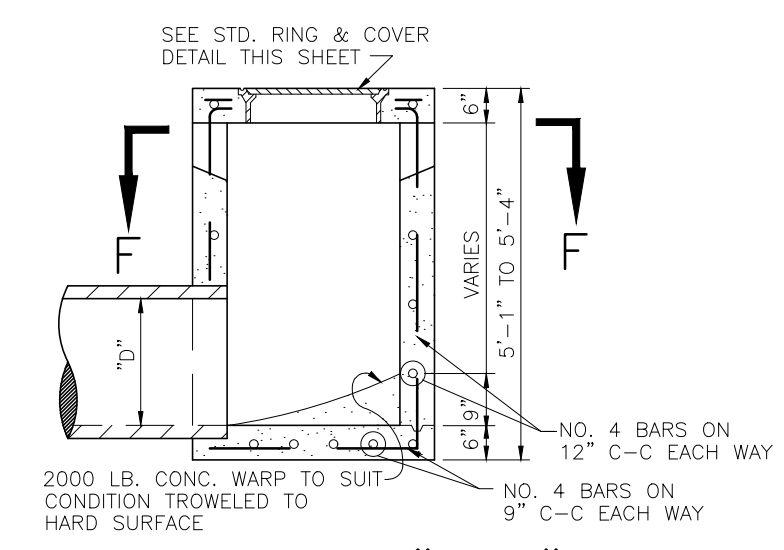
PLAN R.O.W. AREA INLET



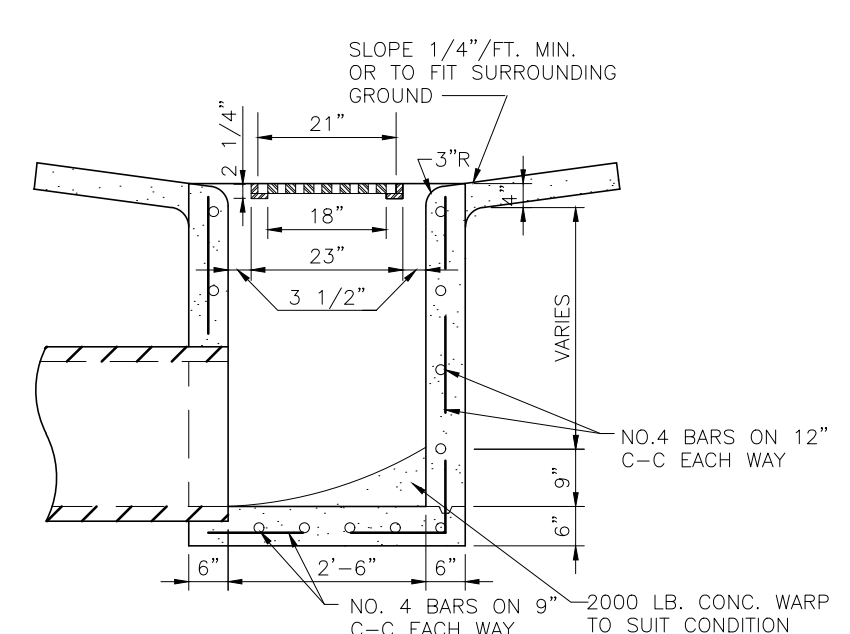
PROFILE



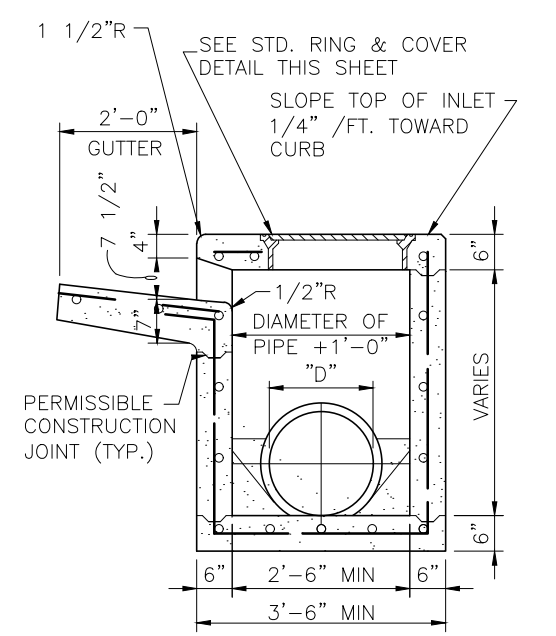
PLAN STANDARD CURB INLET



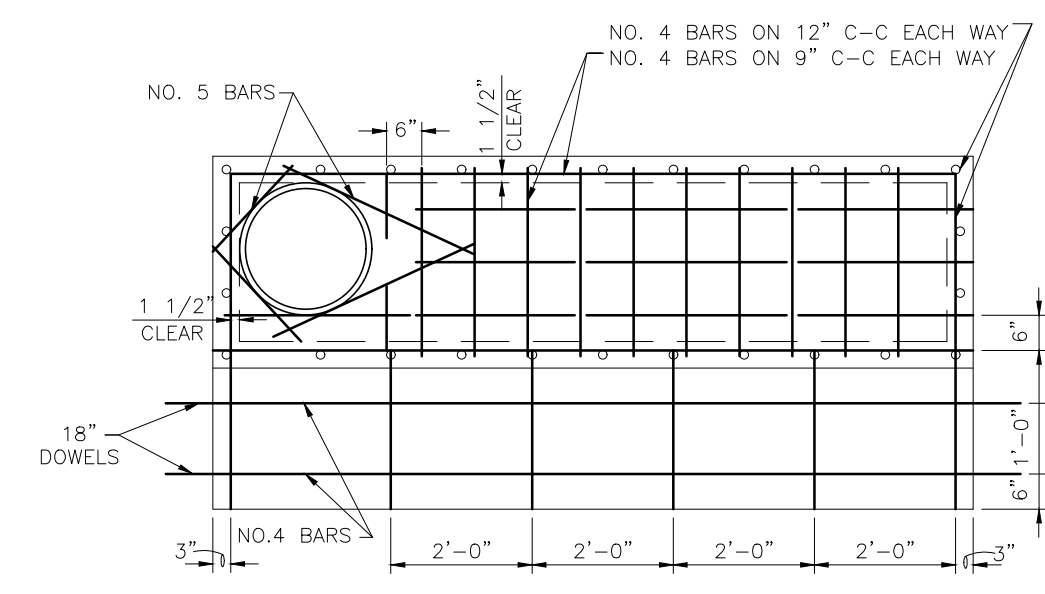
SECTION "E-E"



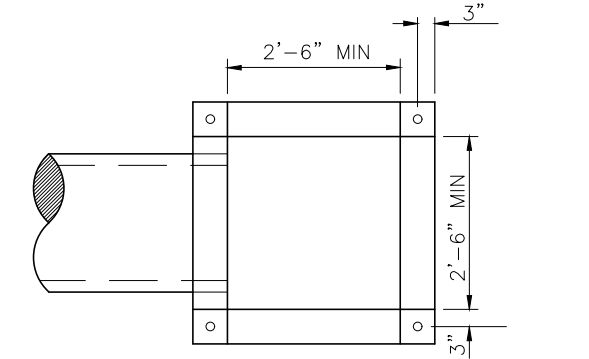
SECTION "J-J"



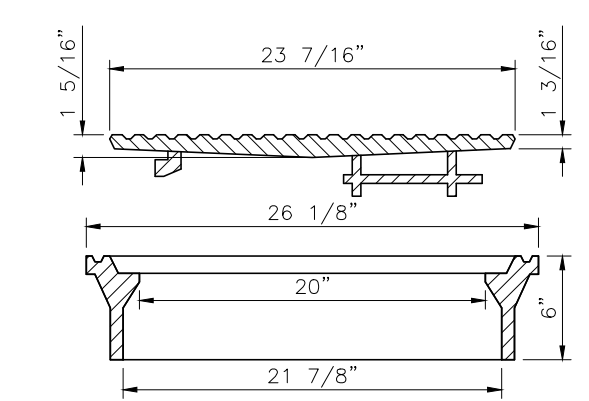
SECTION "B-B"



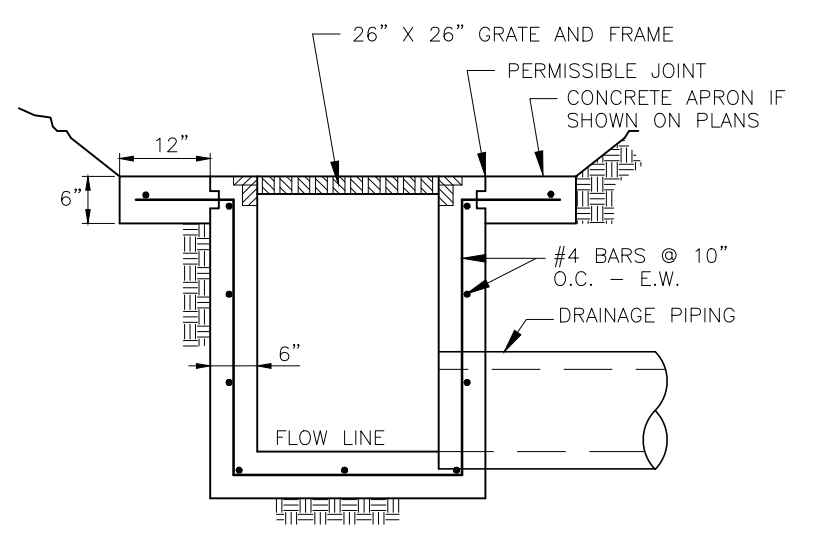
REINFORCING PLAN



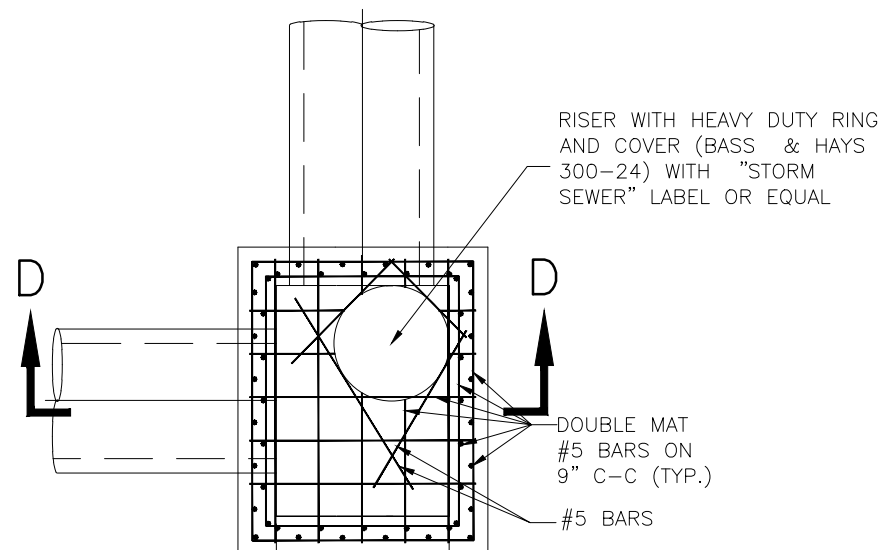
SECTION "F-F"



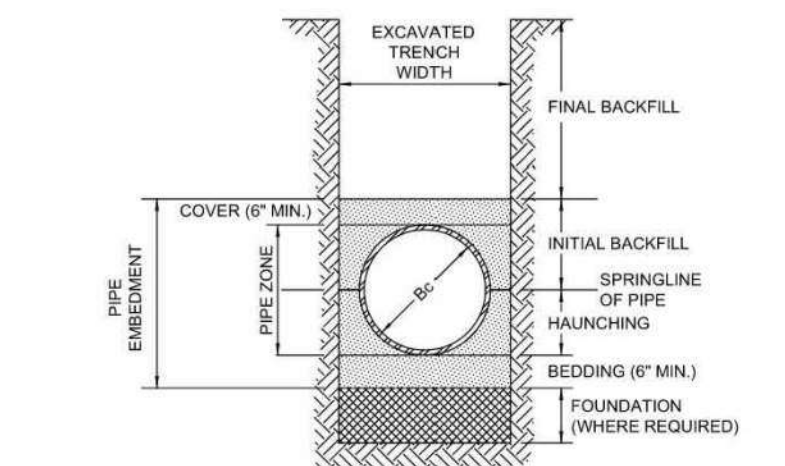
DETAIL INLET RING & COVER



CATCH BASIN



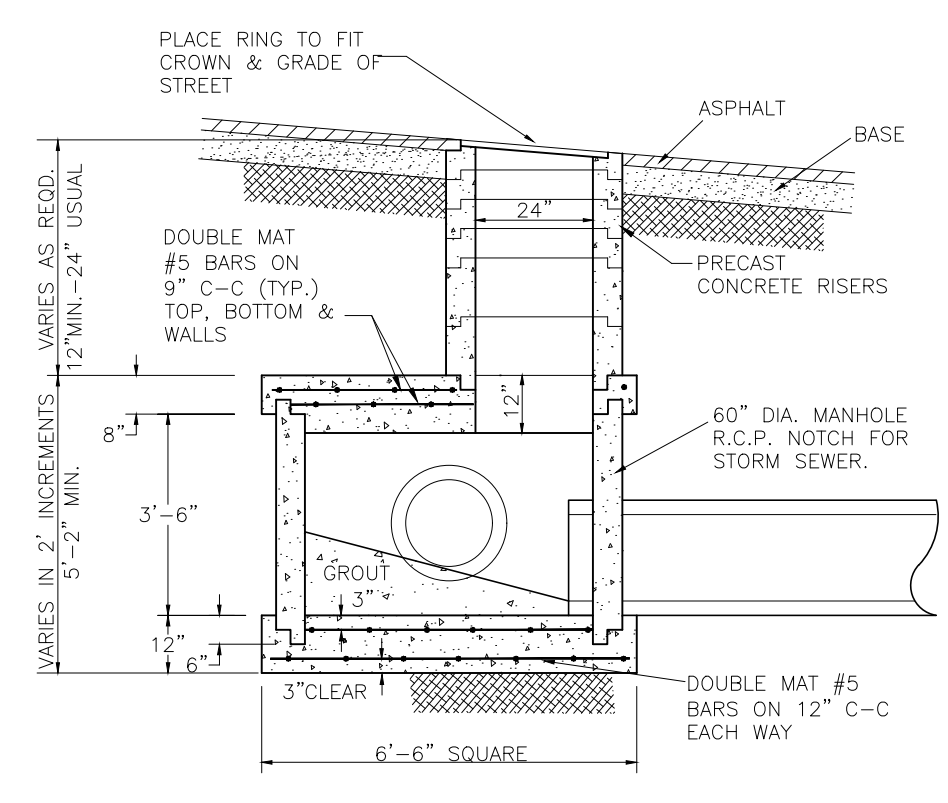
PLAN VIEW



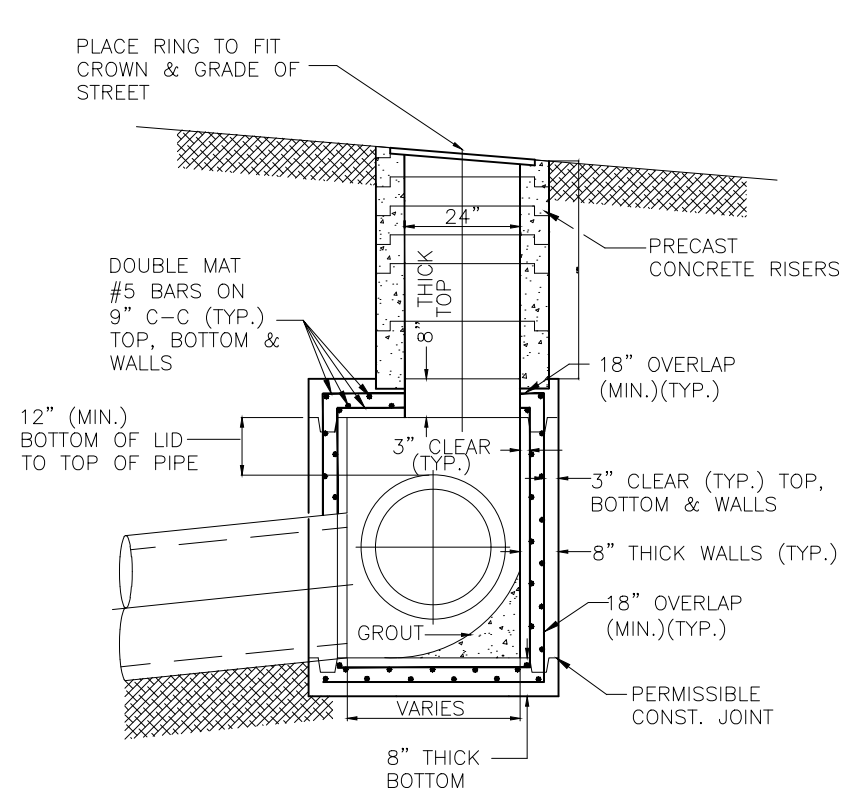
STORM SEWER TRENCH DETAIL FOR HDPE PIPE

NOTES: 1. MATERIAL USED FOR BEDDING, HAUNCHING, INITIAL BACKFILL AND COVER SHALL ALL BE THE SAME MATERIAL AND SHALL BE IN ACCORDANCE WITH EMBEDMENT SPECIFICATION IN THE CITY OF TYLER STANDARD SPECIFICATION FOR HDPE PIPE.

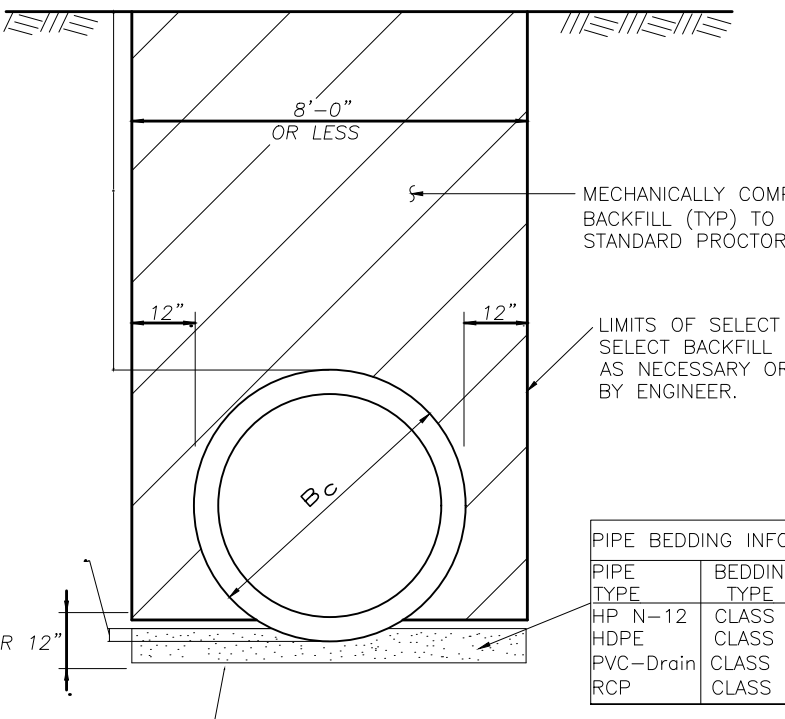
BASS & HAYS LOCKING INLET RING & COVER. (WITH COVER MARKED "STORM DRAIN"). PATTERN NO.226-L. WEIGHT: 130 LBS. (OR EQUIVALENT)



SECTION "C-C" STANDARD STORM SEWER MANHOLE



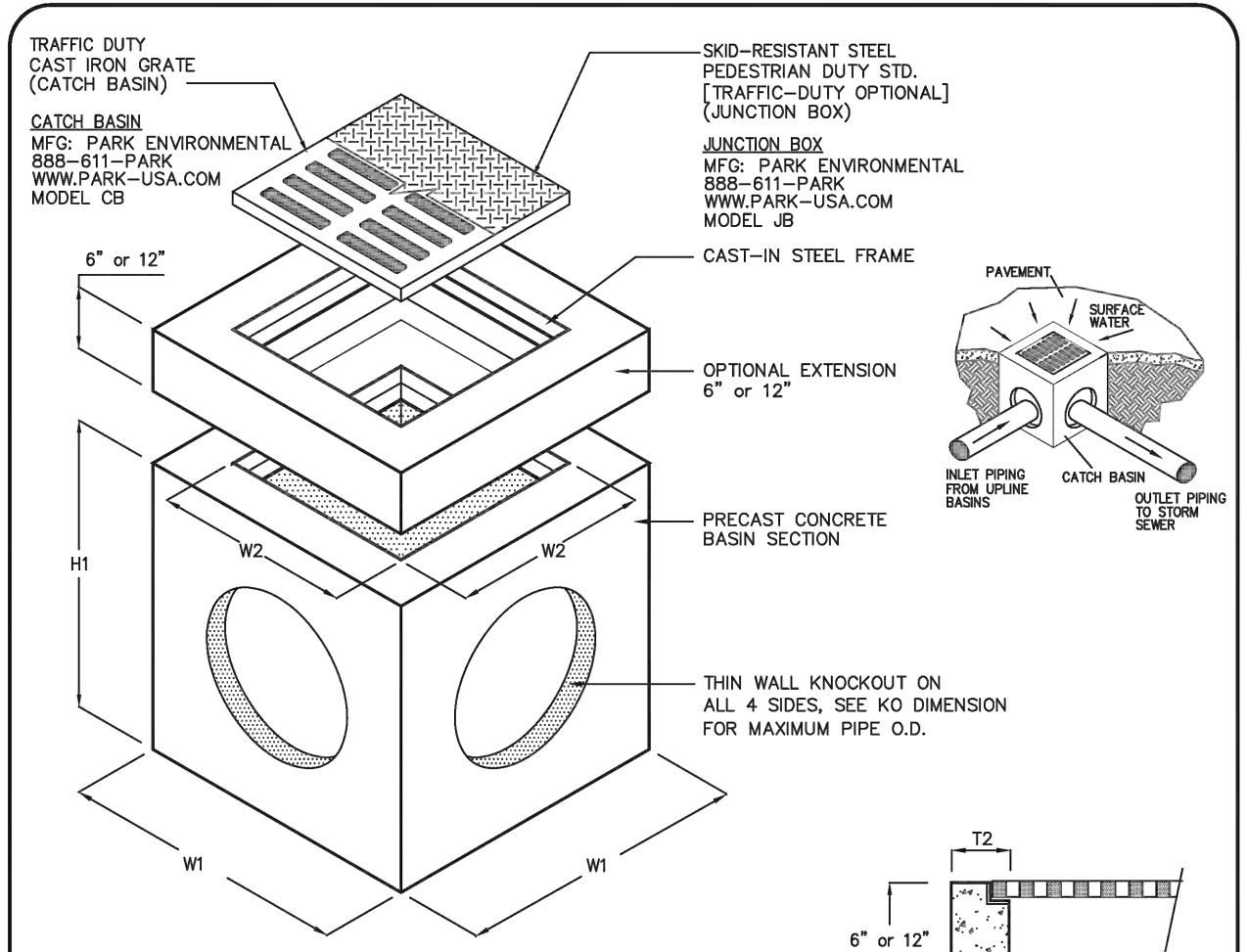
SECTION "D-D" STANDARD CONCRETE JUNCTION BOX



STORM SEWER TRENCH DETAIL FOR 60" PIPE OR LESS

PIPE BEDDING INFORMATION:			
PIPE TYPE	BEDDING TYPE	CLASS	TECHNICAL SPEC
HP N-12	CLASS I, II OR III	33-40-00	
HDPE	CLASS I, II OR III	33-41-13	
PVC-Drain	CLASS 'D'	33-41-14	
RCP	CLASS 'C'	33-42-13	

- UNLESS OTHERWISE SPECIFIED, ALL CURB INLETS SHALL BE RECESSED PER CITY OF TYLER STANDARD DETAIL FOR RECESSED INLETS.
- CURB INLETS GREATER THAN 10" SHALL HAVE A 6" X 6" COLUMN IN THE THROAT LOCATED NO MORE THAN 10" APART.
- LOCKING RING AND COVER FOR ALL INLETS AND JUNCTION BOXES SHALL BE BASS & HAYS FOUNDRY, INC 226-L OR APPROVED EQUAL WITH THE WORDS "STORM DRAIN" CAST ON THE LID.
- RING AND COVER ON 8" AND 10" CURB INLETS SHALL BE LOCATED IN THE BACK CORNER OF THE INLET OVER THE DOWNSTREAM PIPE. RING AND COVER ON 12" AND 20" CURB INLETS SHALL BE IN THE BACK CORNER OR IN THE MIDDLE BACK OF THE INLET OVER THE DOWNSTREAM PIPE.
- GRATE AND FRAME FOR AREA INLETS SHALL BE BASS & HAYS FOUNDRY, INC. VFG SERIES OR APPROVED EQUAL.
- ALL CONCRETE INLETS SHALL HAVE A COMPRESSIVE STRENGTH OF 3,600 PSI AT 28 DAYS (MIN. 5-SACK MIX).
- REINFORCEMENT, STRUCTURAL STEEL AND CASTINGS SHALL CONFORM TO TxDOT SPECIFICATIONS.
- REINFORCING STEEL SHOWN IN REINFORCING PLAN SHALL BE EXTENDED INTO TRANSITION AREA OF RECESSED CURB INLETS.
- TOPS OF INLETS WILL NOT BE CONSTRUCTED UNTIL CURB AND GUTTER HAS BEEN POURED. THE CONTRACTOR WILL COVER THE INLET WITH PLYWOOD, BOARDS, WIRE MESH OR OTHER SUITABLE MATERIAL TO ELIMINATE THE HAZARDS OF AN OPEN INLET DURING CONSTRUCTION.
- CHAIRS SHALL BE USED FOR SUPPORT OF REINFORCING IN INLET FLOORS AND APRON UNLESS OTHERWISE DIRECTED BY THE CITY OF TYLER.
- WEEP HOLES WITH WIRE MESH AND ONE CUBIC FOOT OF WASHED AGGREGATE SHALL BE INSTALLED IN INLET WALLS WHEN DIRECTED BY THE CITY OF TYLER.
- CHAMFER ALL EXPOSED CORNERS 3/4" UNLESS OTHERWISE NOTED.
- NO MEASUREMENT OR PAYMENT FOR REINFORCING STEEL, STANDARD COVERS AND FRAMES, OR EXCAVATION SHALL BE MADE. SUCH ITEMS ARE CONSIDERED SUBSIDIARY TO THE UNIT BID FOR INLETS.
- THAT PORTION OF THE BACKFILL WHICH WILL NOT SUPPORT ANY PORTION OF COMPLETE ROADBED OR EMBANKMENT SHALL BE PLACED IN LAYERS NOT MORE THAN 10" IN DEPTH (LOOSE MEASUREMENT) AND SHALL BE COMPACTED IN ACCORDANCE WITH CITY OF TYLER SPECIFICATIONS. THAT PORTION OF THE BACKFILL WHICH WILL SUPPORT ANY PORTION OF THE ROADBED OR EMBANKMENT SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED 6" IN DEPTH (LOOSE MEASUREMENT) AND SHALL BE COMPACTED IN ACCORDANCE WITH CITY OF TYLER SPECIFICATIONS.
- INLET SIZES SHOWN ON PLANS REFER TO ACTUAL WIDTH OF OPENINGS.
- PIPE EMBEDMENT SHALL CONFORM WITH TxDOT OR CITY OF TYLER SPECIFICATIONS (AS APPLICABLE) FOR THE CLASS NOTED ON THE PLANS. NO PAY ITEM IS PROVIDED FOR THE EMBEDMENT WHICH SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT BID FOR PIPE IN PLACE.



MODEL #	JUNCTION BOX #	DIMENSIONS							GRATE SIZE	WEIGHT LBS
CATCH BASIN		W1	W2	H1	H2	T1	T2	KO		
CB-12	JB-12	15"	10"	21"	18"	3"	2 1/2"	10"	12"x12"x1"	180
CB-14	JB-14	20"	14"	28"	24"	4"	3"	12"	14"x14"x1 1/2"	600
CB-18	JB-18	24"	18"	34"	30"	4"	4"	15"	18"x18"x1 1/2"	1,000
CB-20	JB-20	28"	18"	34"	30"	4"	4"	17"	20"x20"x1 1/2"	1,335
CB-24	JB-24	32"	22"	41"	36"	5"	5"	22"	24"x24"x2"	2,245
CB-27	JB-27	37"	25"	42"	36"	6"	6"	24"	27"x27"x2"	2,875
CB-30	JB-30	42"	30"	42"	36"	6"	6"	30"	32"x32"x2"	3,675
CB-36	JB-36	48"	36"	42"	36"	6"	6"	32"	38"x38"x2"	4,585

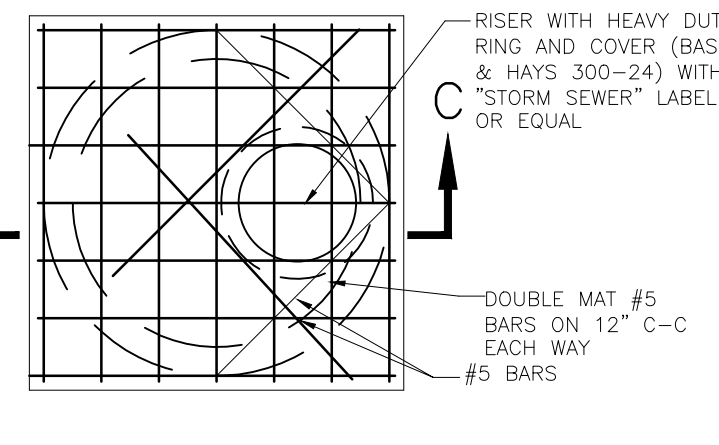
1. G22 CATCHBINS IS RATED FOR PEDESTRIAN LOADING. ALL OTHERS ARE TRAFFIC DUTY.  
2. ALL JUNCTION BOXES ARE STANDARD PEDESTRIAN DUTY OR OPTIONAL TRAFFIC DUTY.

**PARK ENVIRONMENTAL EQUIPMENT** 888-611-PARK www.park-usa.com

"Expect the Best!"

**CATCH BASIN MODEL CB - 12" THRU 36" JUNCTION BOX MODEL JB - 12" THRU 36"**

SCALE: NONE DWG. NO. CBJB36 REV. A



PLAN VIEW

DESIGNED BY: RLB  
DATE: JANUARY 2023

PRELIMINARY  
02-24-2023

1321 SOUTH BROADWAY  
SUITE 101  
DALLAS, TEXAS 75211  
(972) 597-2122

**BRANNON CORP**  
CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
M.P. REGISTRATION NO. FF-242  
WWW.BRANNONCORP.COM

CONSTRUCTION PLANS FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

ISSUED FOR:  
PRELIMINARY FOR REVIEW ONLY

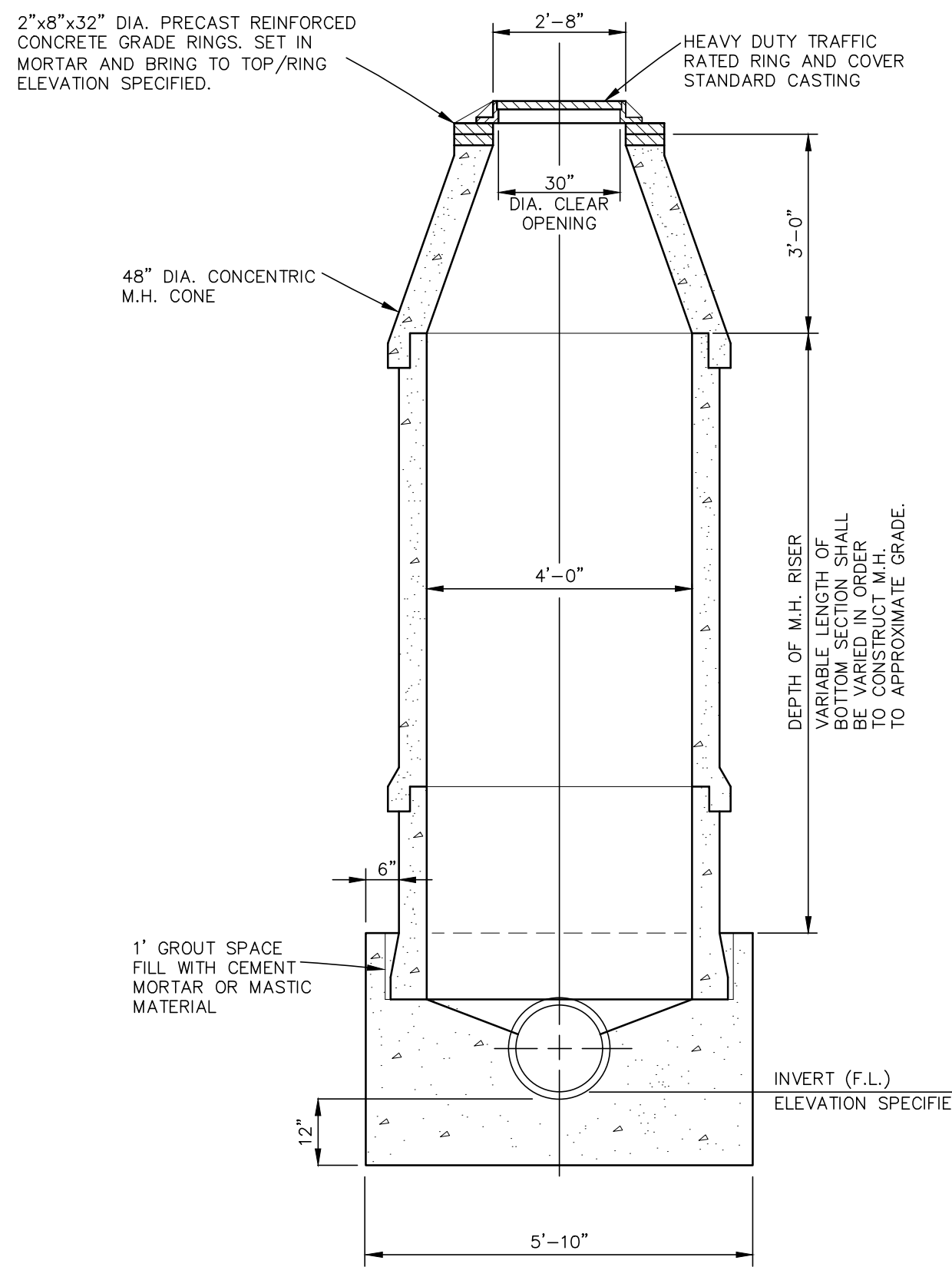
PROJECT NO. 22104  
SHEET NO.

**C-10.01**

**CURB INLET DETAILS**

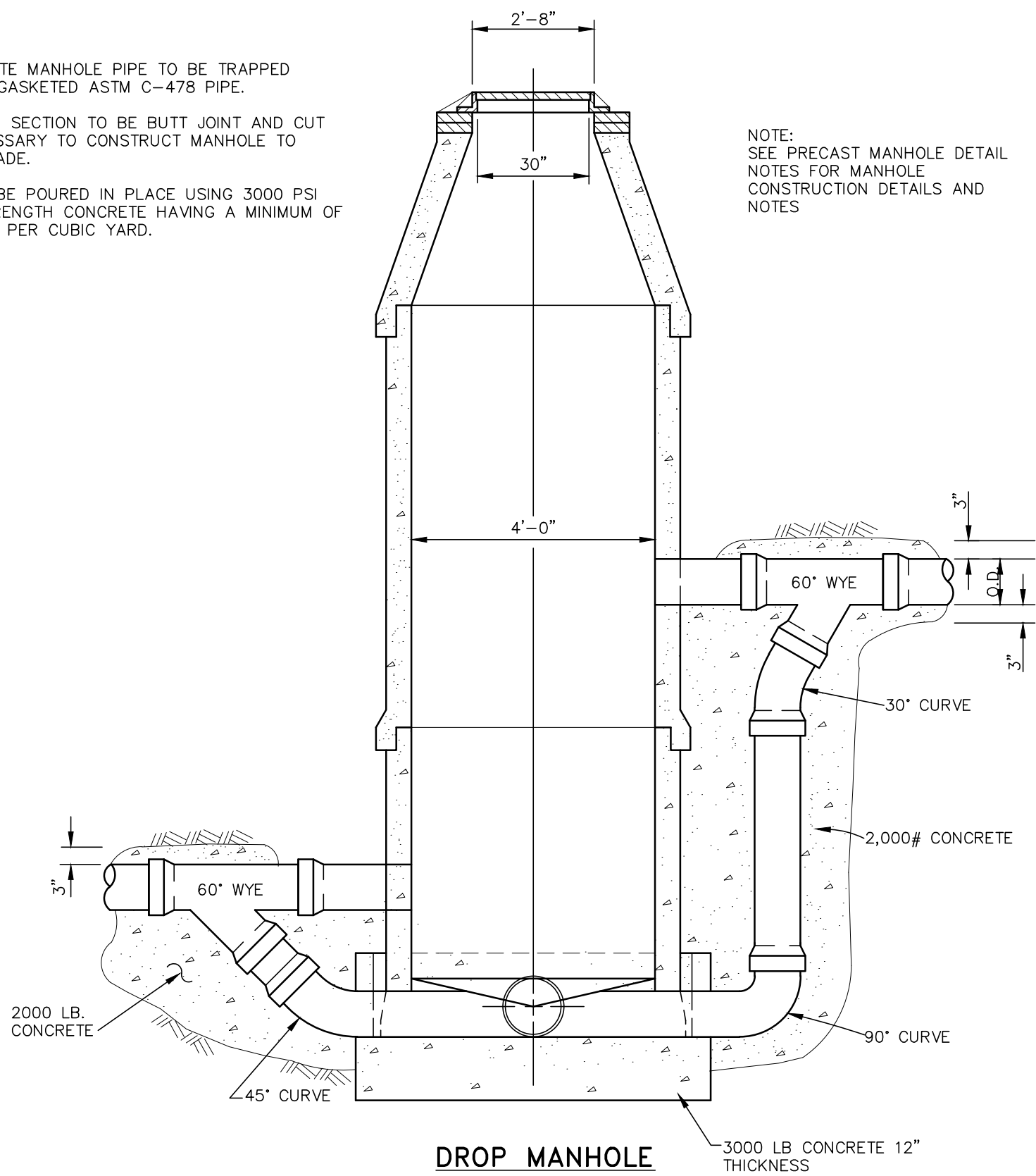
22104-10.01-Standard Details.dwg

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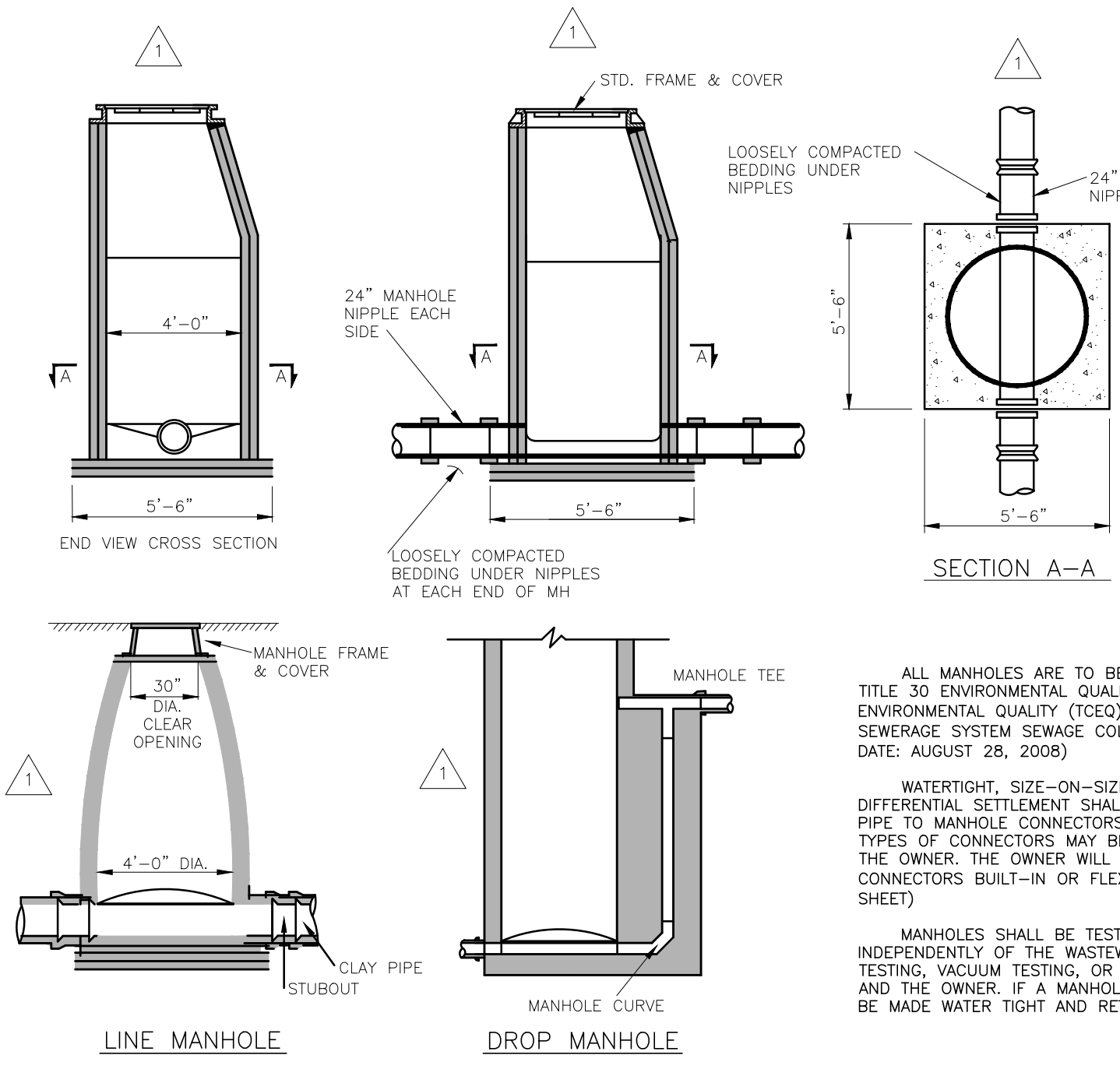
PRECAST CONCRETE MANHOLE DETAIL

- MANHOLES NOTES:**
1. PRECAST CONCRETE MANHOLE PIPE TO BE TRAPPED 0-RING RUBBER GASKETED ASTM C-478 PIPE.
  2. BOTTOM OF RISER SECTION TO BE BUTT JOINT AND CUT TO LENGTH NECESSARY TO CONSTRUCT MANHOLE TO APPROXIMATE GRADE.
  3. BOTTOMS SHALL BE POURED IN PLACE USING 3000 PSI COMPRESSIVE STRENGTH CONCRETE HAVING A MINIMUM OF 5 SACKS CEMENT PER CUBIC YARD.



DROP MANHOLE

NOTE: SEE PRECAST MANHOLE DETAIL NOTES FOR MANHOLE CONSTRUCTION DETAILS AND NOTES

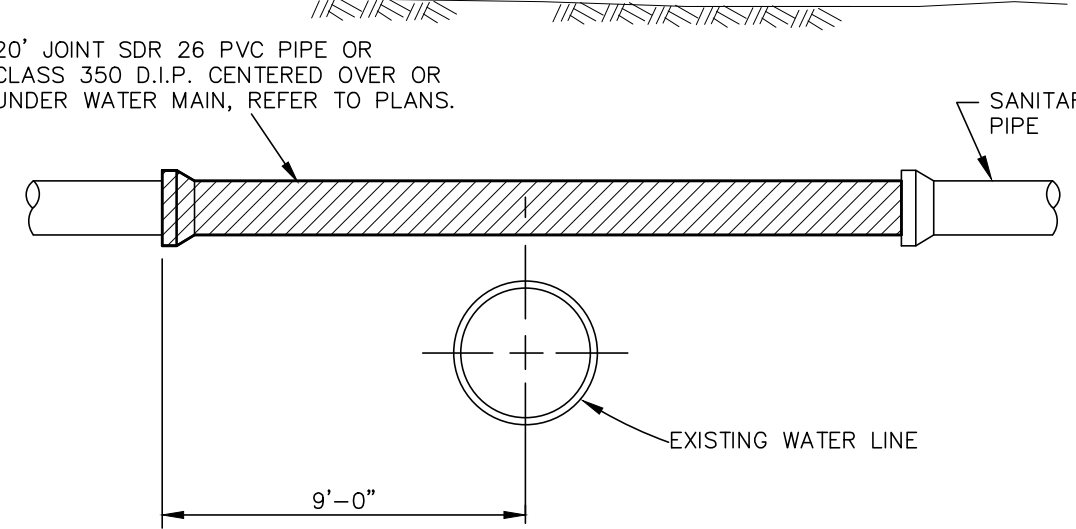


- NOTES:**
1. DO NOT POUR ADDITIONAL CONCRETE ON OR BEYOND OUTSIDE FACE OF MANHOLE.
  2. USE A MINIMUM OF 1 NIPPLE AT EACH END OF MANHOLE.
  3. PIPE OPENING IN PRE-CAST CONCRETE UNITS SHALL BE EQUAL TO O.D. OF PIPE PLUS 6" MAXIMUM.
  4. DO NOT USE BRICK, BLOCK OR TIMBER TO SUPPORT PIPE OR NIPPLES OUTSIDE OF MANHOLE.

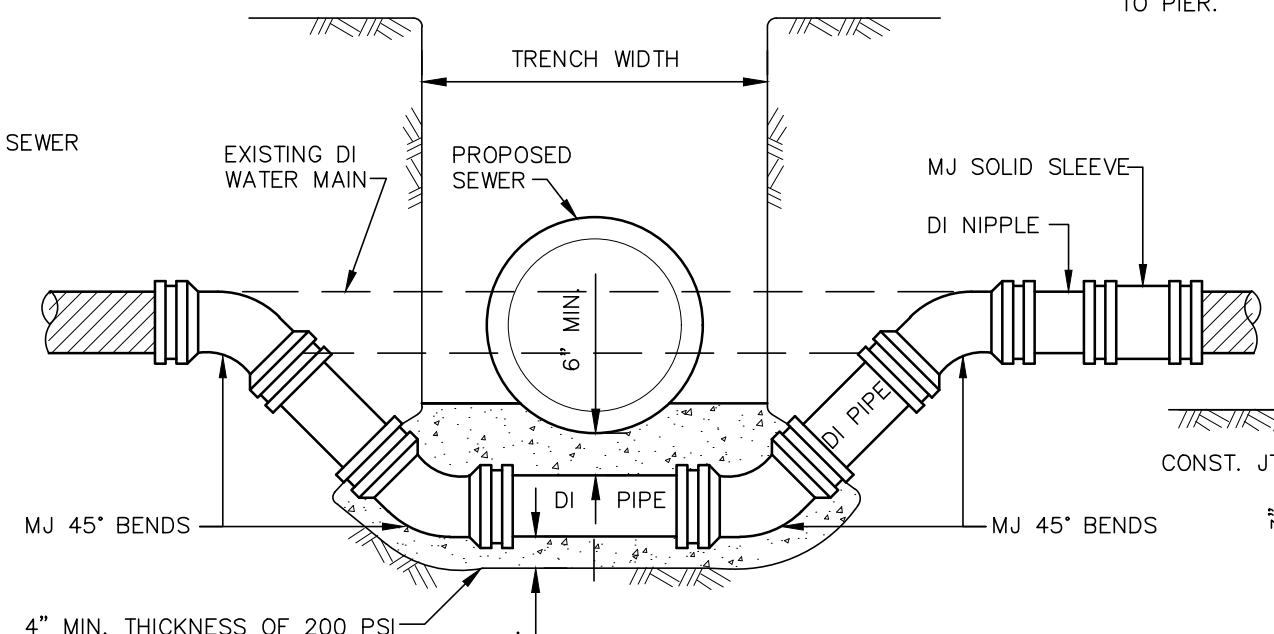
ALL MANHOLES ARE TO BE CONSTRUCTED AND TESTED ACCORDING TO TITLE 30 ENVIRONMENTAL QUALITY PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) CHAPTER 217. DESIGN CRITERIA FOR SEWERAGE SYSTEM SEWAGE COLLECTION SYSTEM (30 TAC S 217) (EFFECTIVE DATE: AUGUST 28, 2008)

WATERTIGHT, SIZE-ON-SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT SHALL BE USED TO CONNECT PIPE TO MANHOLES. PIPE TO MANHOLE CONNECTORS SHALL CONFORM TO ASTM C-923. OTHER TYPES OF CONNECTORS MAY BE USED WHEN APPROVED BY THE TCEQ AND THE OWNER. THE OWNER WILL ALLOW PRECAST MANHOLE BOTTOMS WITH THE CONNECTORS BUILT-IN OR FLEXIBLE JOINTS OR NIPPLES. (SEE DETAIL THIS SHEET)

MANHOLES SHALL BE TESTED FOR LEAKAGE SEPARATELY AND INDEPENDENTLY OF THE WASTEWATER LINES BY HYDROSTATIC EXPLORATION TESTING, VACUUM TESTING, OR OTHER METHODS ACCEPTABLE TO THE TCEQ AND THE OWNER. IF A MANHOLE FAILS A LEAKAGE TEST, THE MANHOLE MUST BE MADE WATER TIGHT AND RETESTED.

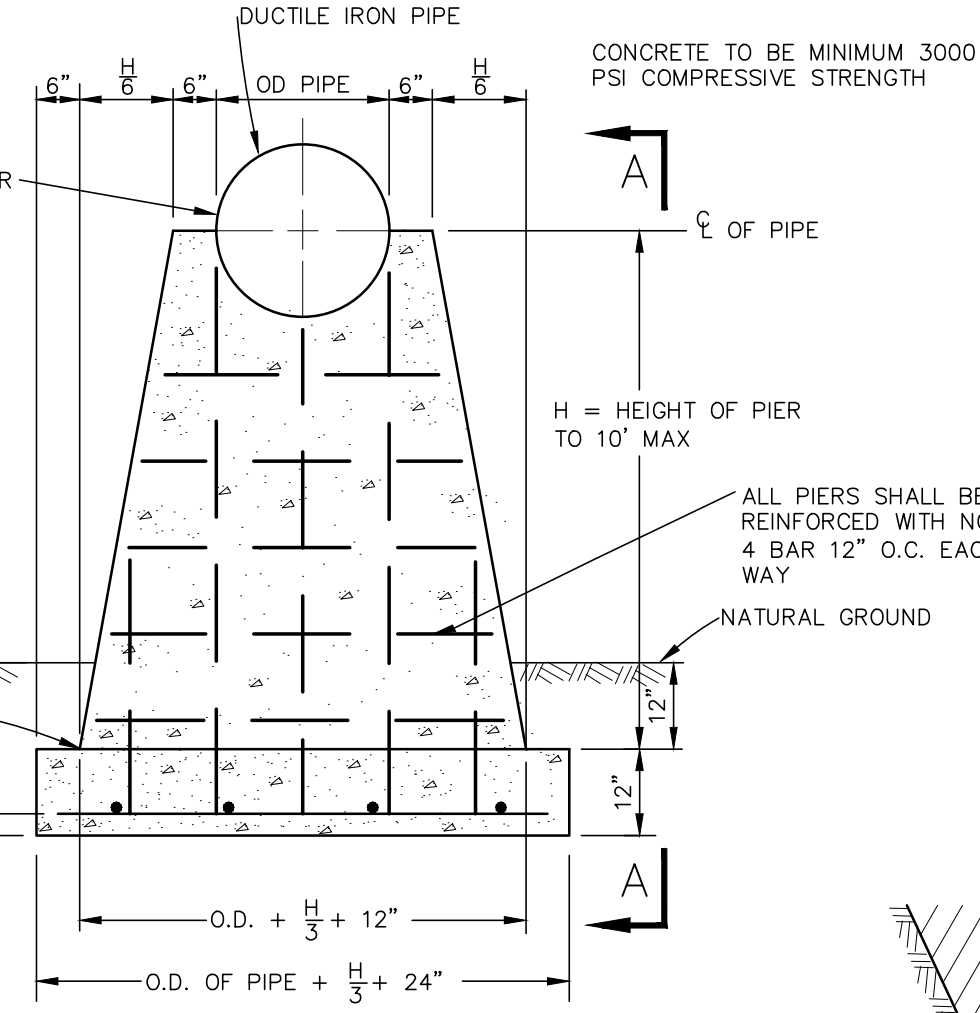


DETAIL OF SEWER CROSSING EXISTING WATER LINE

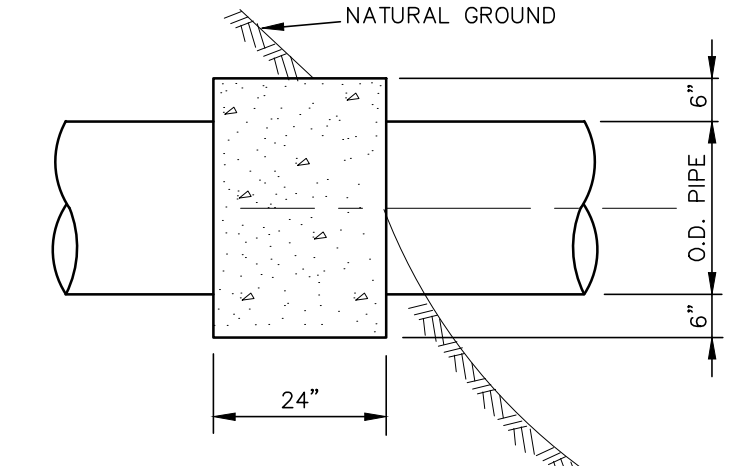


DETAIL FOR WATER MAIN LOWERING

- NOTE:** NO PAY ITEM IS SPECIFICALLY PROVIDED FOR LOWERING WATER MAINS. SAID WORK IS CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
- NOTE:** WATER MAIN IS TO BE RAISED TO GO OVER THE PROPOSED SEWER LINE IF ADEQUATE DEPTH IS AVAILABLE.

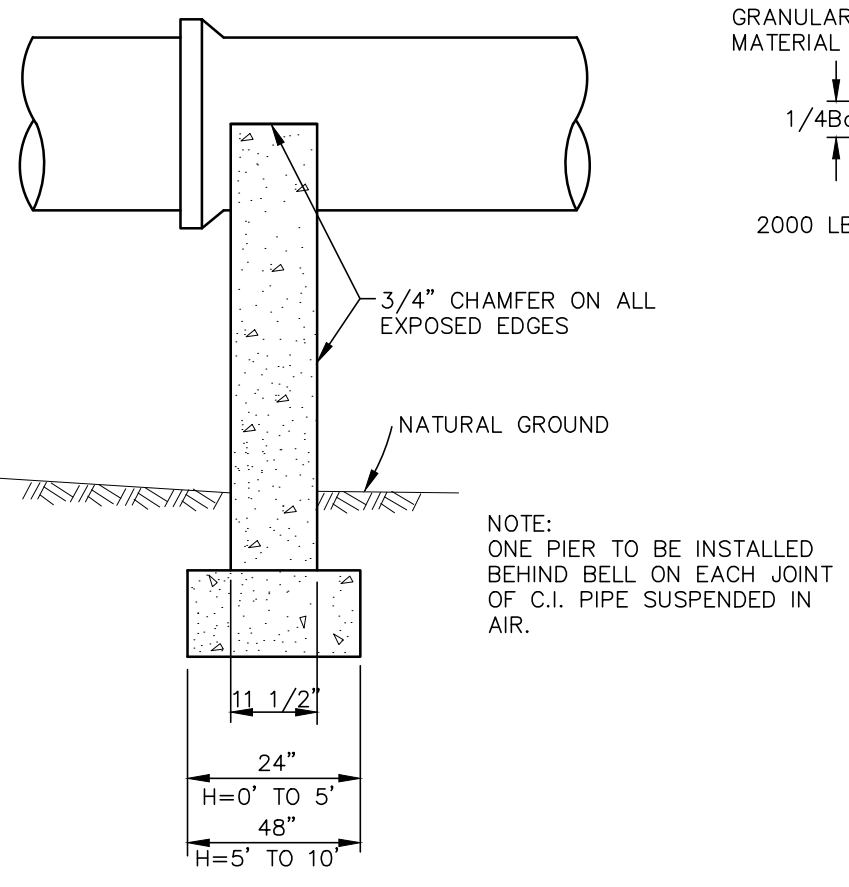


CONCRETE PIER DETAILS



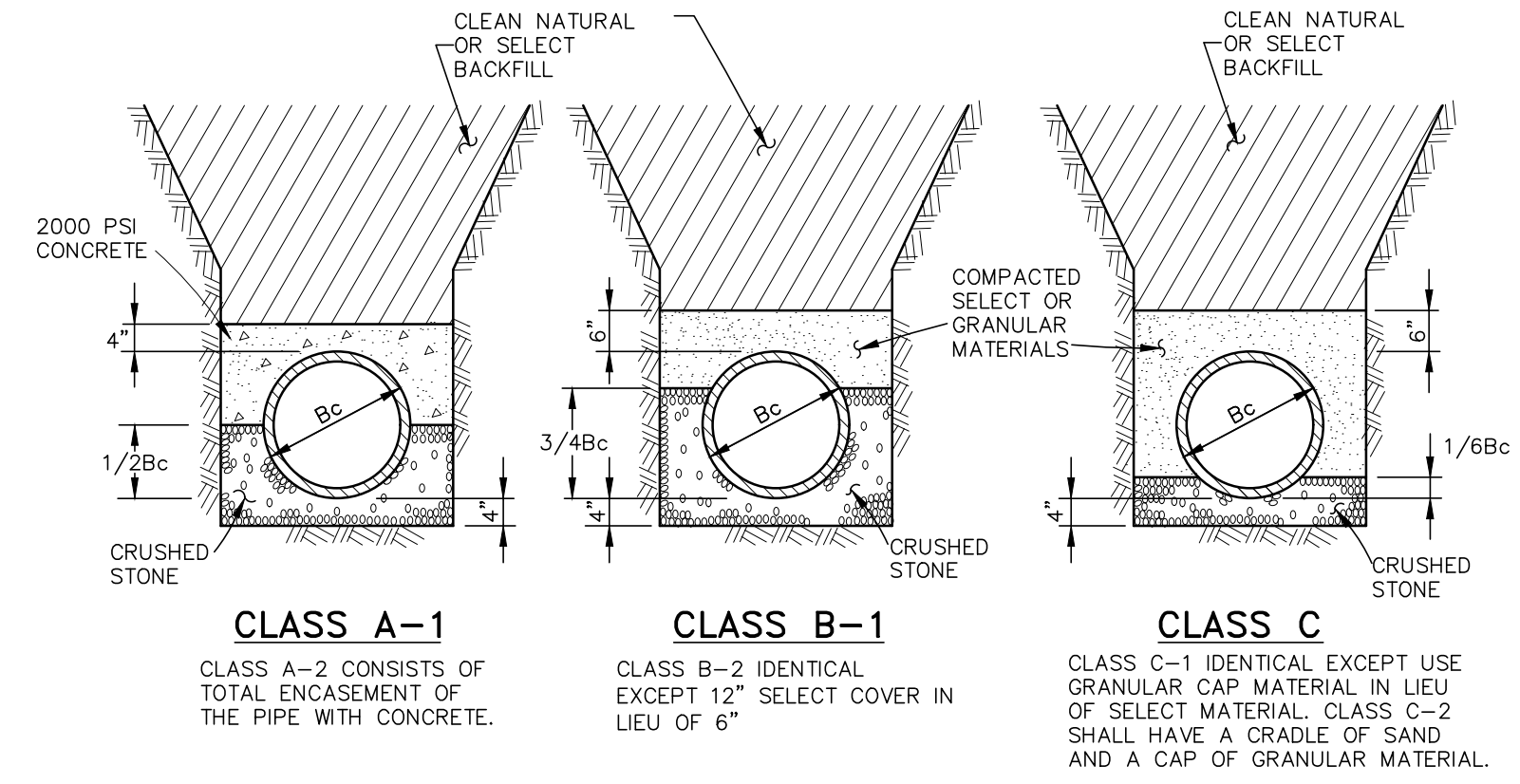
CONCRETE HEAD BLOCK

- NOTE:** USE WHEN LESS THAN ONE HALF OR PIPE JOINT IS EMBEDDED IN EMBANKMENT



CONCRETE PIER SECTION A-A

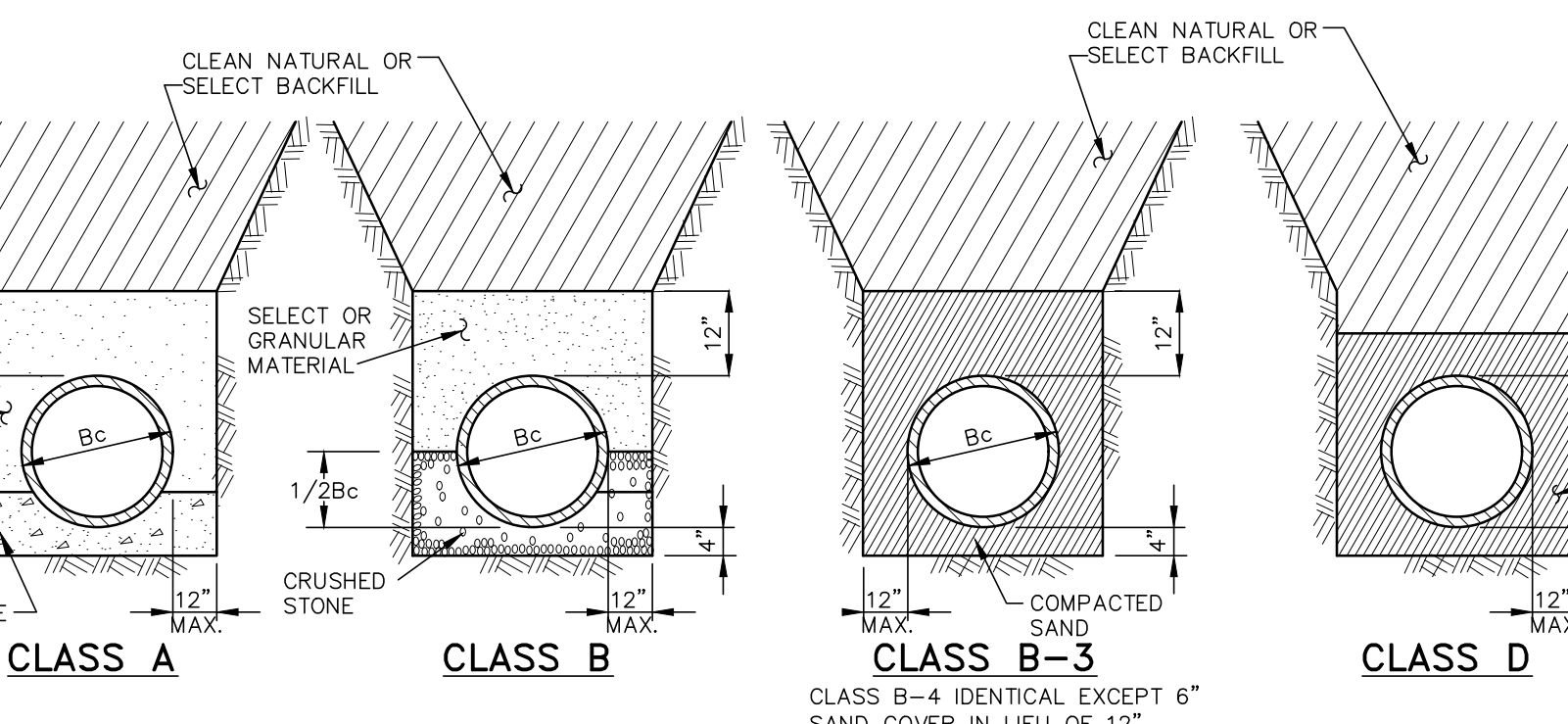
- NOTE:** ONE PIER TO BE INSTALLED BEHIND BELL ON EACH JOINT OF C.I. PIPE SUSPENDED IN AIR.



CLASS A-1

CLASS B-1

CLASS C



CLASS A

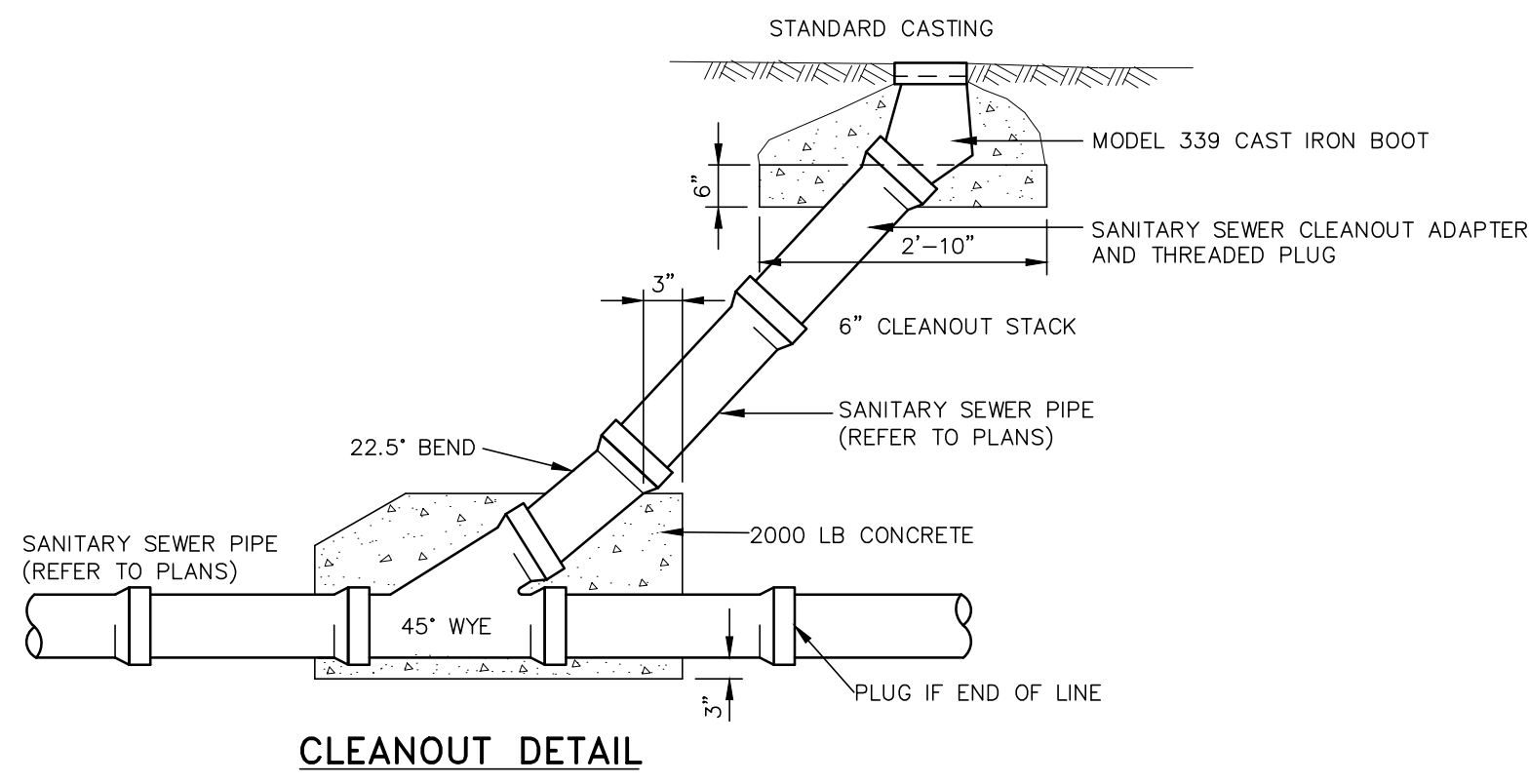
CLASS B

CLASS B-3

CLASS D

CLASSES OF PIPE BEDDING

- NOTES:**
1. WHERE ROCK IS ENCOUNTERED IN TRENCH BOTTOM BEDDING SHALL BE INCREASED TO 6 INCHES.
  2. EXCAVATE BELL HOLES IN BEDDING TO PROVIDE UNIFORM PIPE SUPPORT THE FULL LENGTH.
  3. ALL EMBEDMENT INCLUDING CAP MATERIALS SHALL BE COMPACTED TO 90% STANDARD PROCTOR DENSITY (ASTM D-698) @ +/- 3% OPTIMUM MOISTURE WHEN TESTED IN ACCORDANCE WITH ASTM TEST METHOD D-2922.
  4. CRUSHED STONE SHALL BE ANGULAR, 1/2" TO 1 1/2" SIZE, MEETING THE REQUIREMENTS OF TxDOT AGGREGATE GRADE NO. 4 IN TABLE 4, ITEM 421 (ASTM C33 NO. 57 SIZE AGGREGATE). CONCRETE AGGREGATE GRADE SAND SHALL BE CLEAN, SHARP SAND. SELECT GRANULAR MATERIAL IS DEFINED AS FREE FLOWING WHEN WET OR DRY; FREE OF LUMPS, CLODS, OR STONES IN EXCESS OF 2" IN DIAMETER; AND FREE OF ORGANIC MATERIAL.
  5. CONTRACTOR TO STAMP 'S' IN CURB AT LOCATION OF ALL SANITARY SEWER SERVICES.



CLEANOUT DETAIL

DESIGNED BY: RLB  
DATE: JANUARY 2023

PRELIMINARY  
02-24-2023

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(972) 597-2122

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CONSTRUCTION PLANS FOR  
LEOS LANDING SUBDIVISION IMPROVEMENTS  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

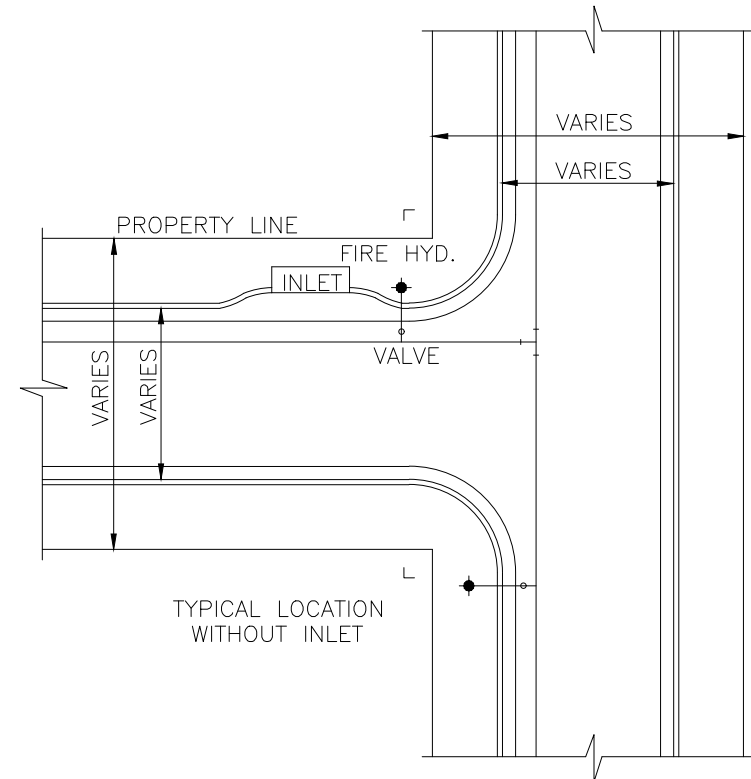
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STANDARD SEWER DETAILS

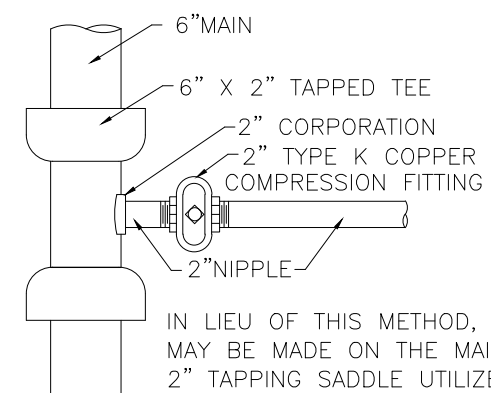
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22104-10.01-Standard Details.dwg

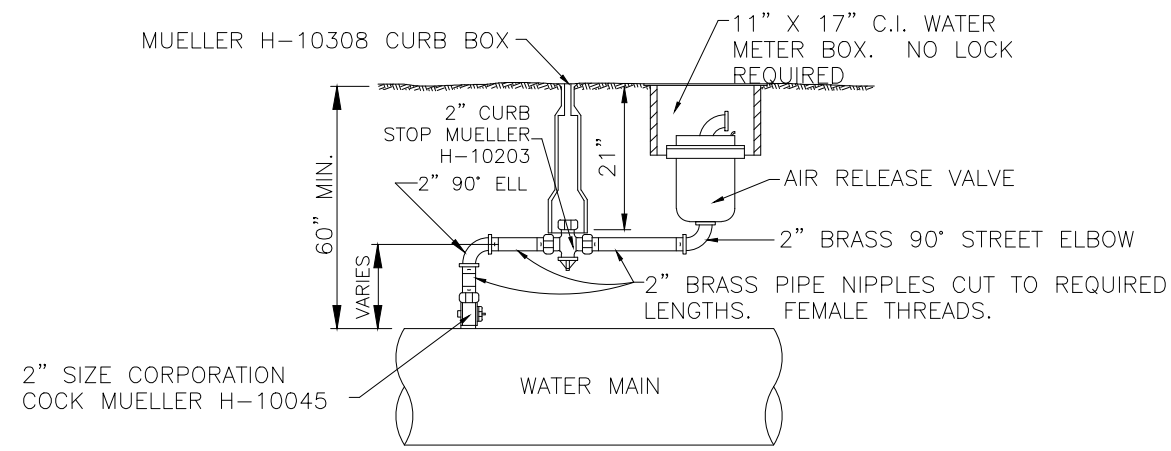


TYPICAL FIRE HYDRANT LOCATION

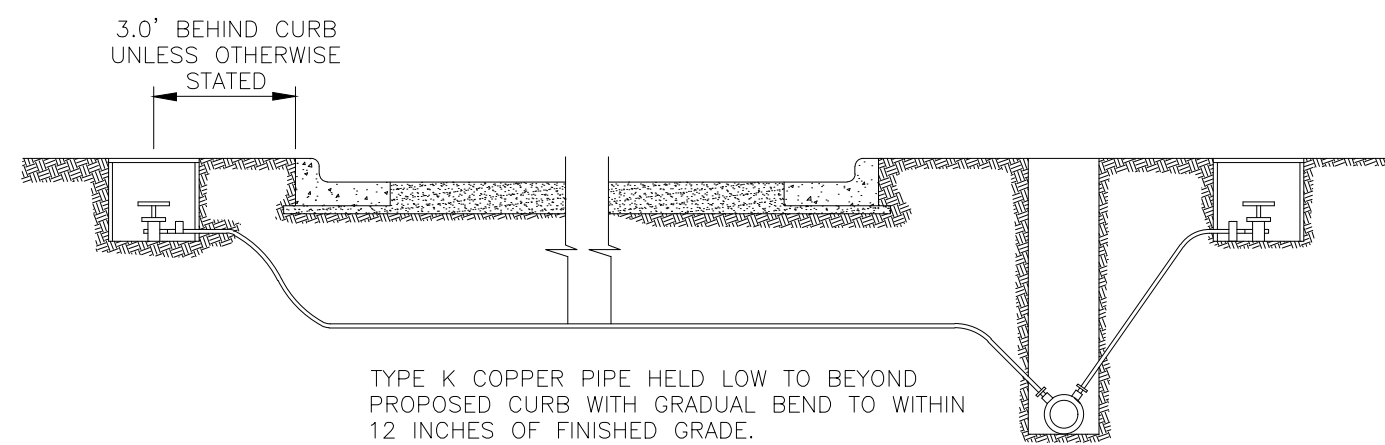
1. FIRE HYDRANT TO BE LOCATED ON POINT OF CURB RADIUS CURVATURE/RETURN.
2. MINIMUM SETBACK TO BE 18" BEHIND CURB.
3. FIRE HYDRANT OPERATING VALVE TO BE INSTALLED WITHIN LIMITS OF PAVING AND AS PER DETAIL. MAIN FIRE HYDRANT NOZZLE TO BE DIRECTED TOWARDS CURB LINE OF STREET INSTALLED.



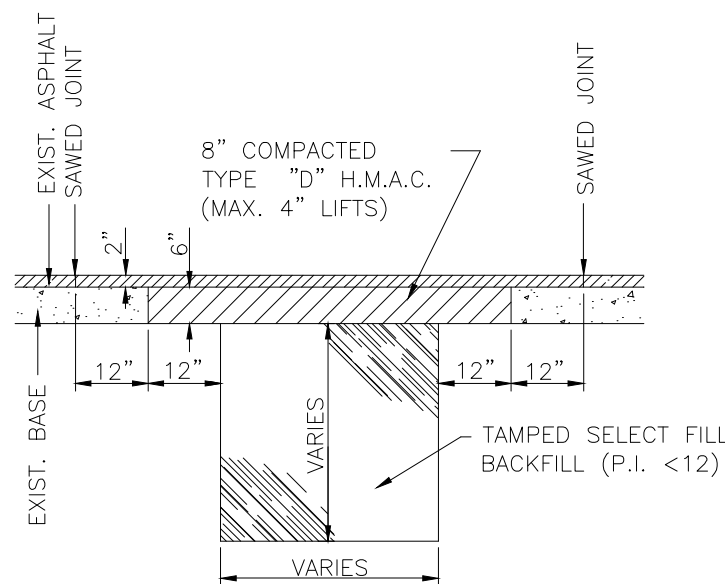
METHOD OF CONNECTING 2" PIPE TO MAIN



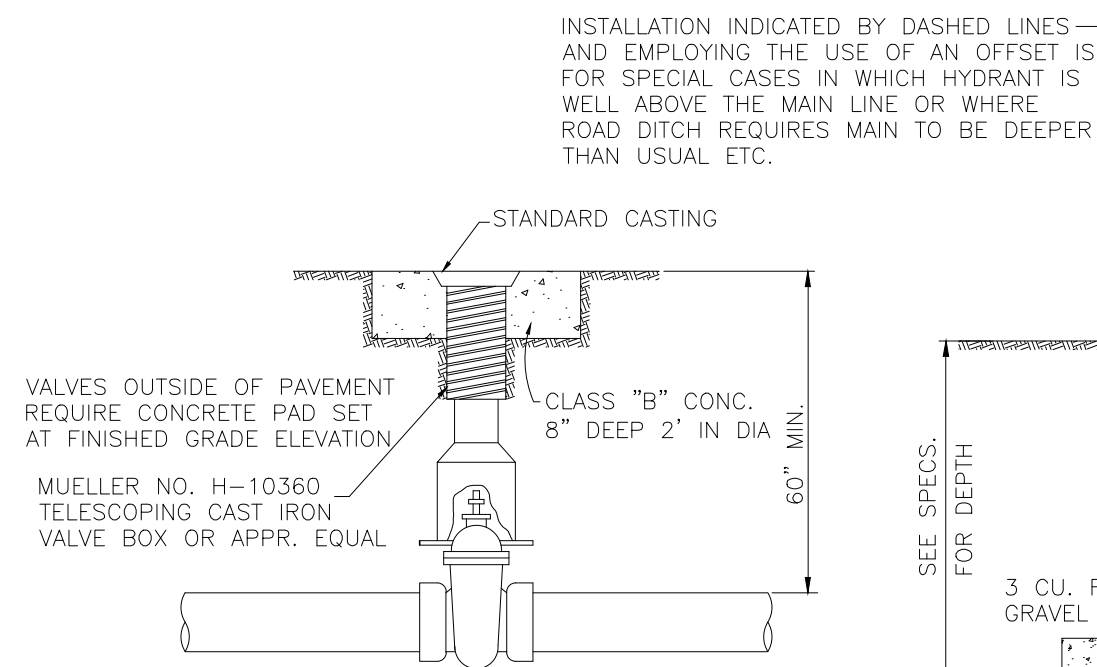
DETAIL OF AIR RELEASE ASSEMBLY



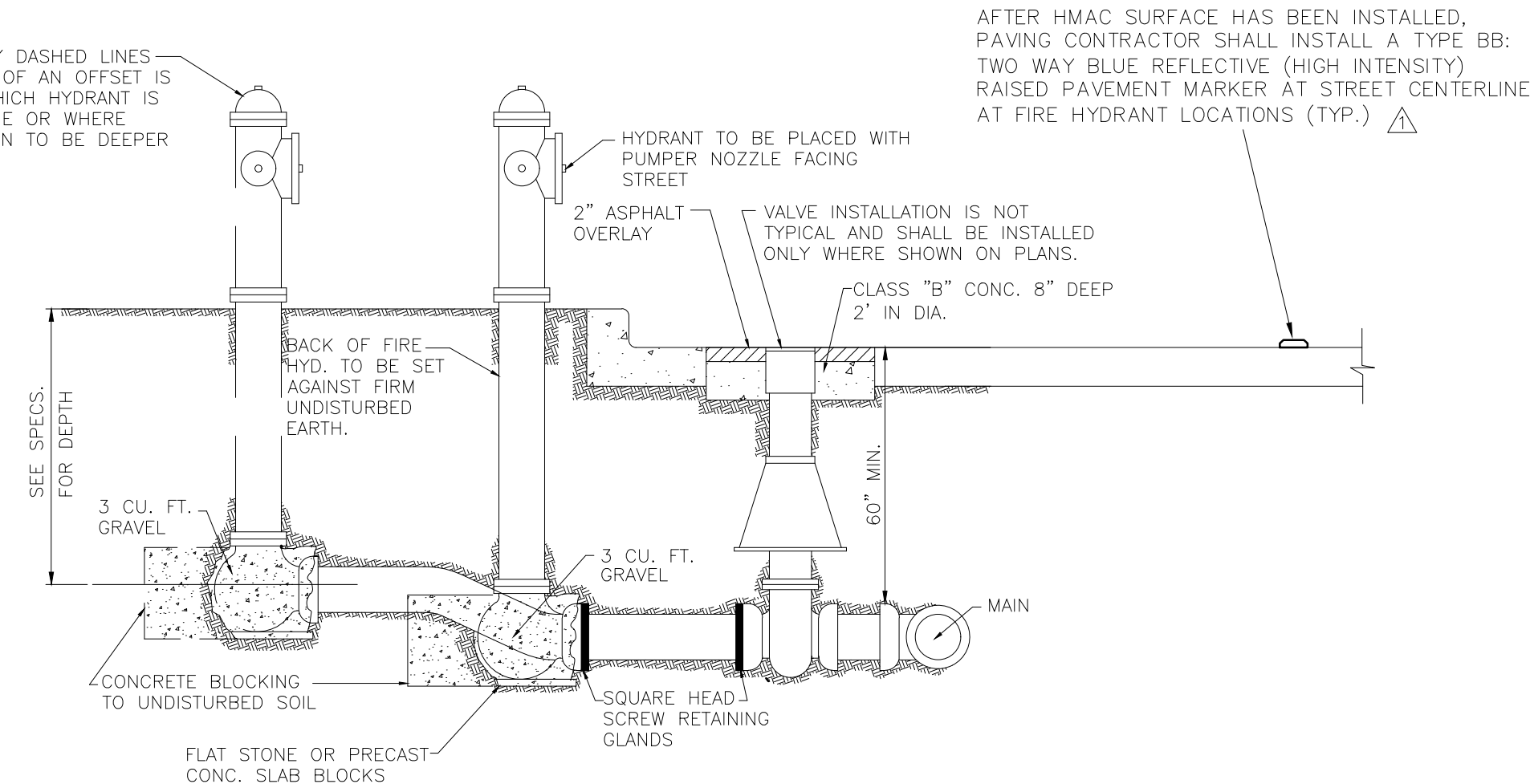
TYPICAL SERVICE CONNECTION



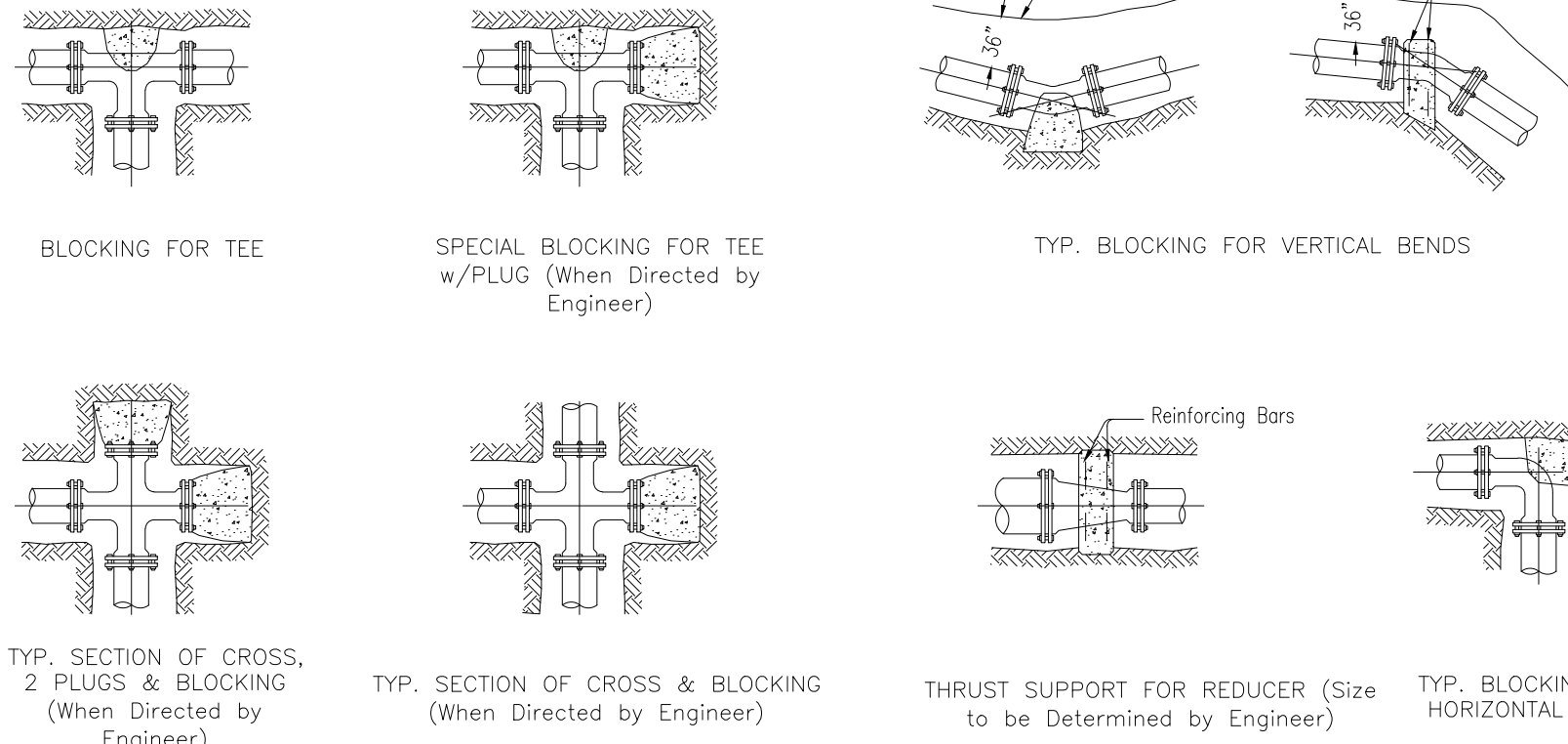
PAVEMENT REPAIR DETAILS



TYPICAL VALVE INSTALLATION



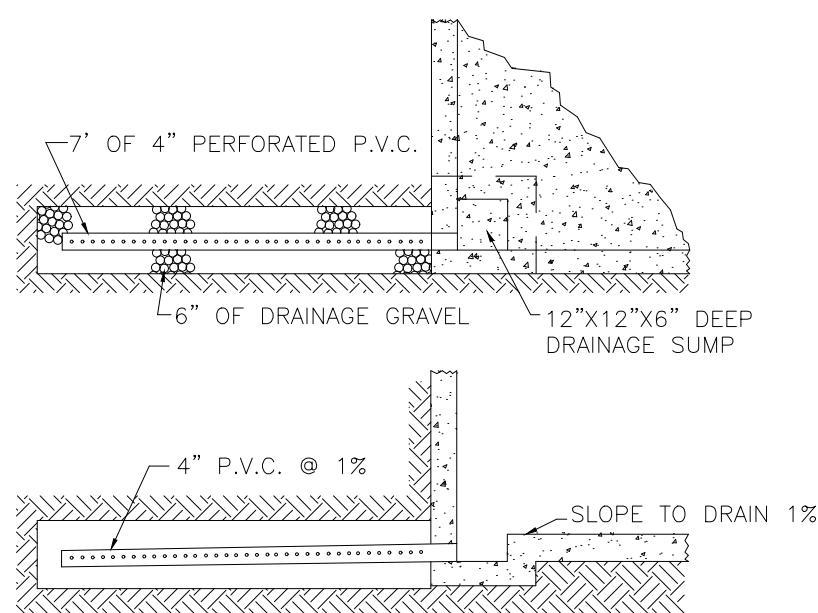
TYPICAL FIRE HYDRANT INSTALLATION



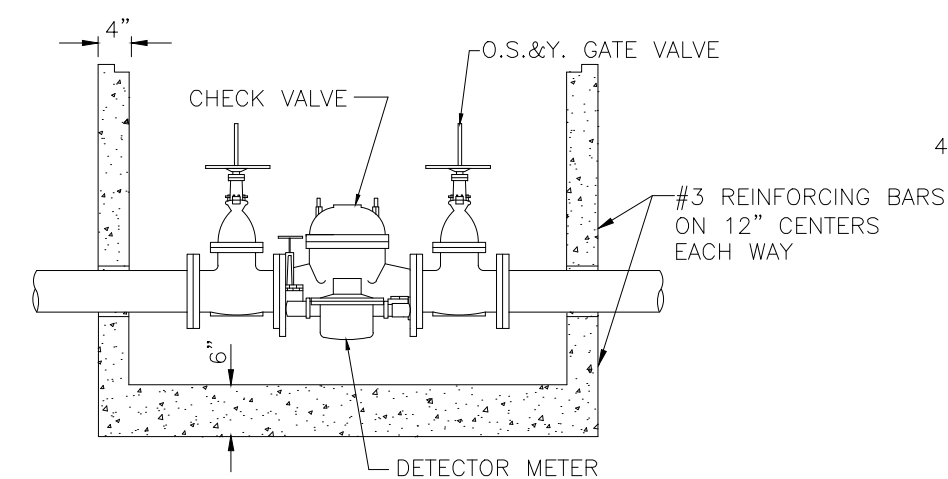
THRUST BLOCKING DETAILS

GENERAL NOTES FOR THRUST BLOCKING:

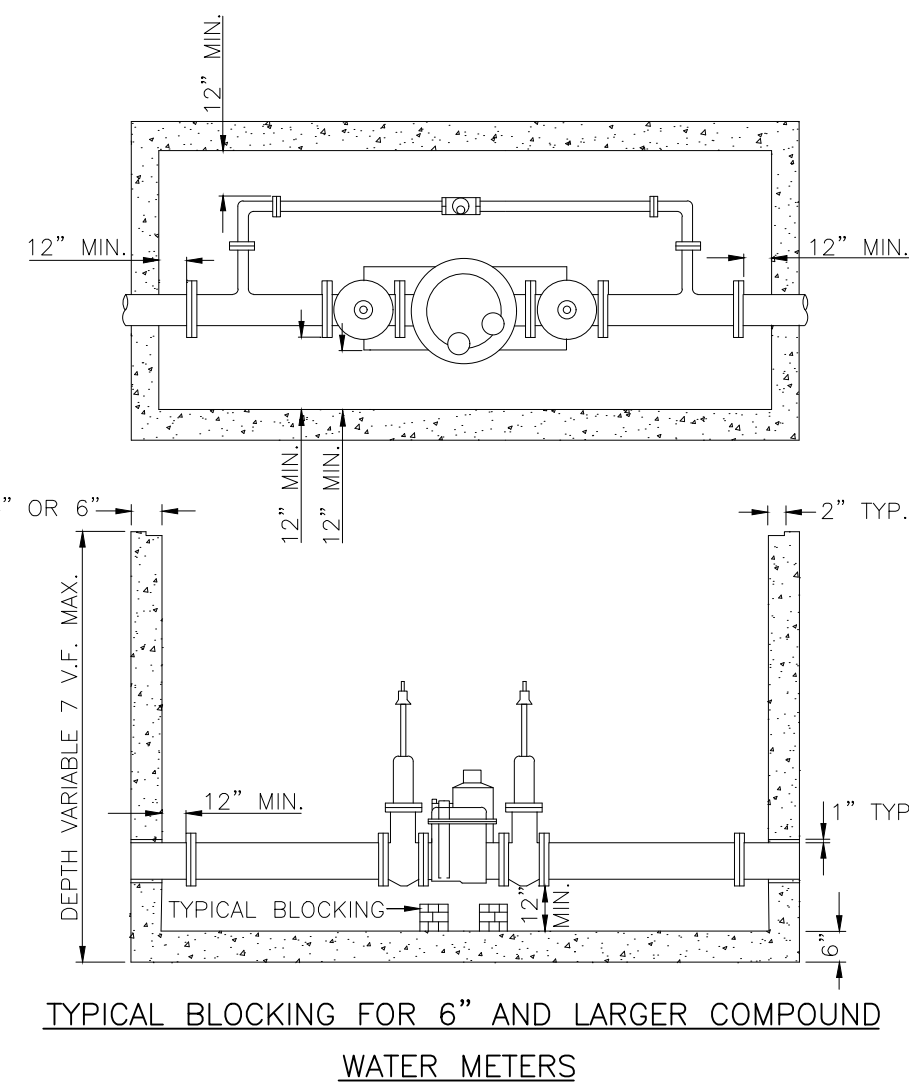
1. All blocking shall be against undisturbed hand dug soil.
2. Where soil conditions make it necessary to pour concrete blocking over joints, the ends of the adjacent pipes must have a kicker block to resist movement of these joints.
3. Weight calculations to be based on thrust due to static pressure +50% thrust = 2 AP SIN 1/20 where A=area of pipe, P=water pressure.
4. Where blocking over plug, plug should be covered with paper to prevent binding of concrete.
5. Where shear becomes a problem, proper reinforcing must be installed into the blocking.
6. Clearance shall be a minimum of 6" between pipe and obstruction.
7. Clearance on pipes belonging to oil & gas companies shall be 18" unless special permission is given by these companies.
8. Provide minimum bearing area in S.E. as follows based on 150 psi test pressure and 2000 psf 50:1 bearing.



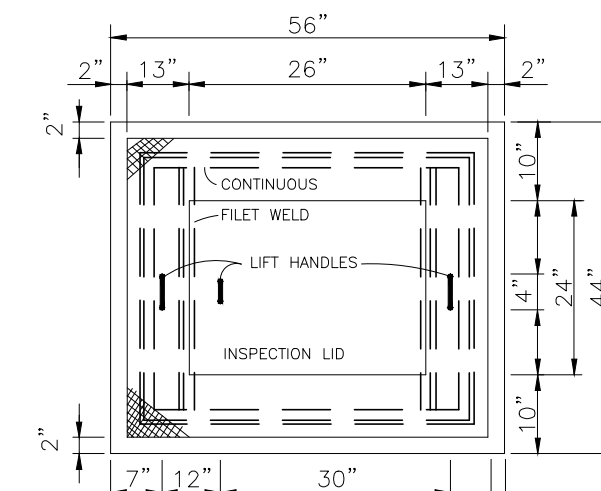
TYPICAL BOX DRAINAGE LINE



TYPICAL DETECTOR CHECK VALVE & METER INSTALLATION

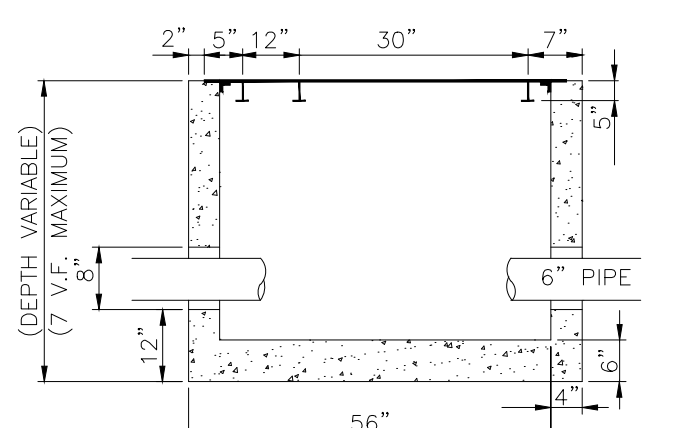


TYPICAL BLOCKING FOR 6" AND LARGER COMPOUND WATER METERS

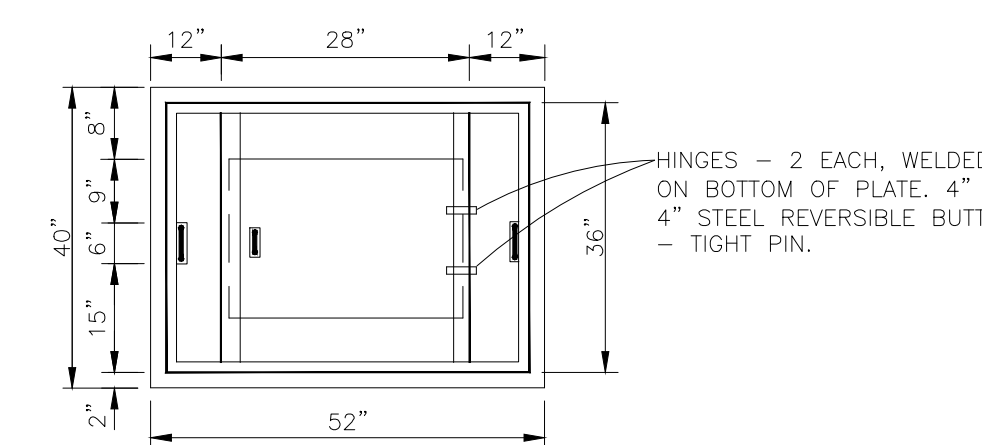


TOP VIEW

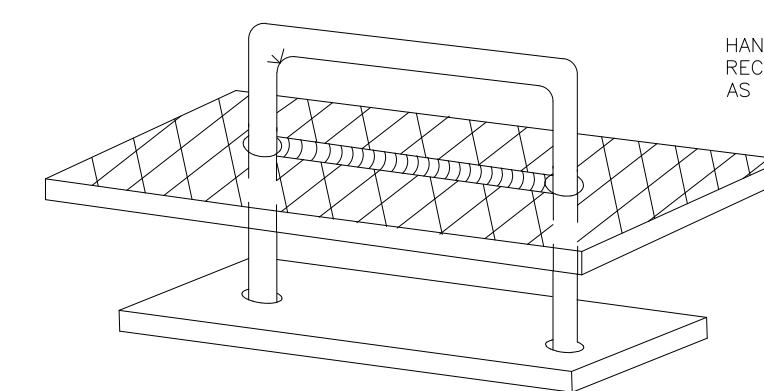
FOR METER PIT 3'x4' I.D. FOR 6" DETECTOR CHECK LESS THAN 5' DEEP



LONGITUDINAL SECTION



BOTTOM VIEW (LID)



TYPICAL LIFT HANDLE

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DESIGNED BY: RLB

DATE: JANUARY 2023



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**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

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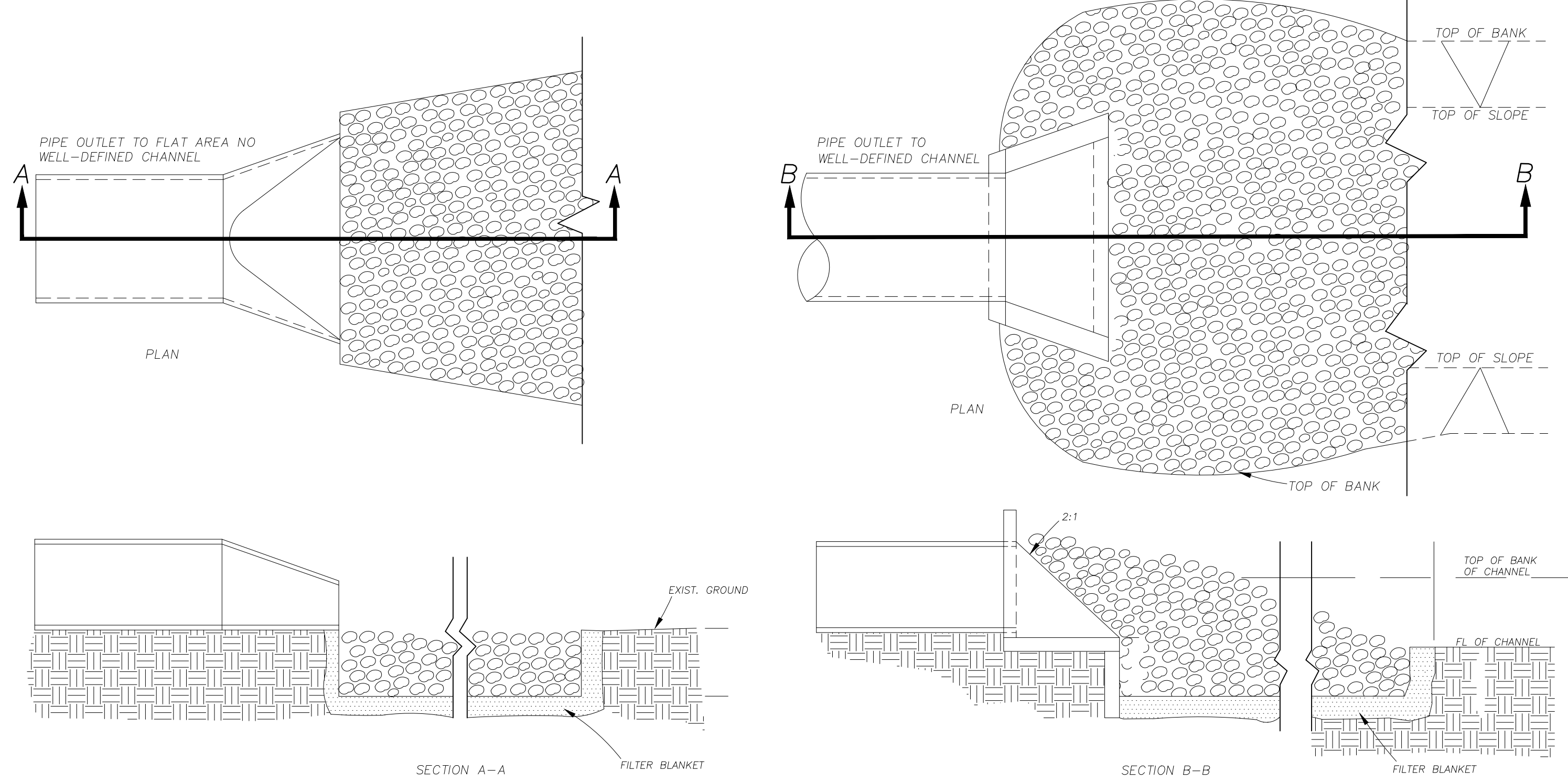
**C-10.02**

**STANDARD WATER DETAILS**

22104-10.01-Standard Details.dwg

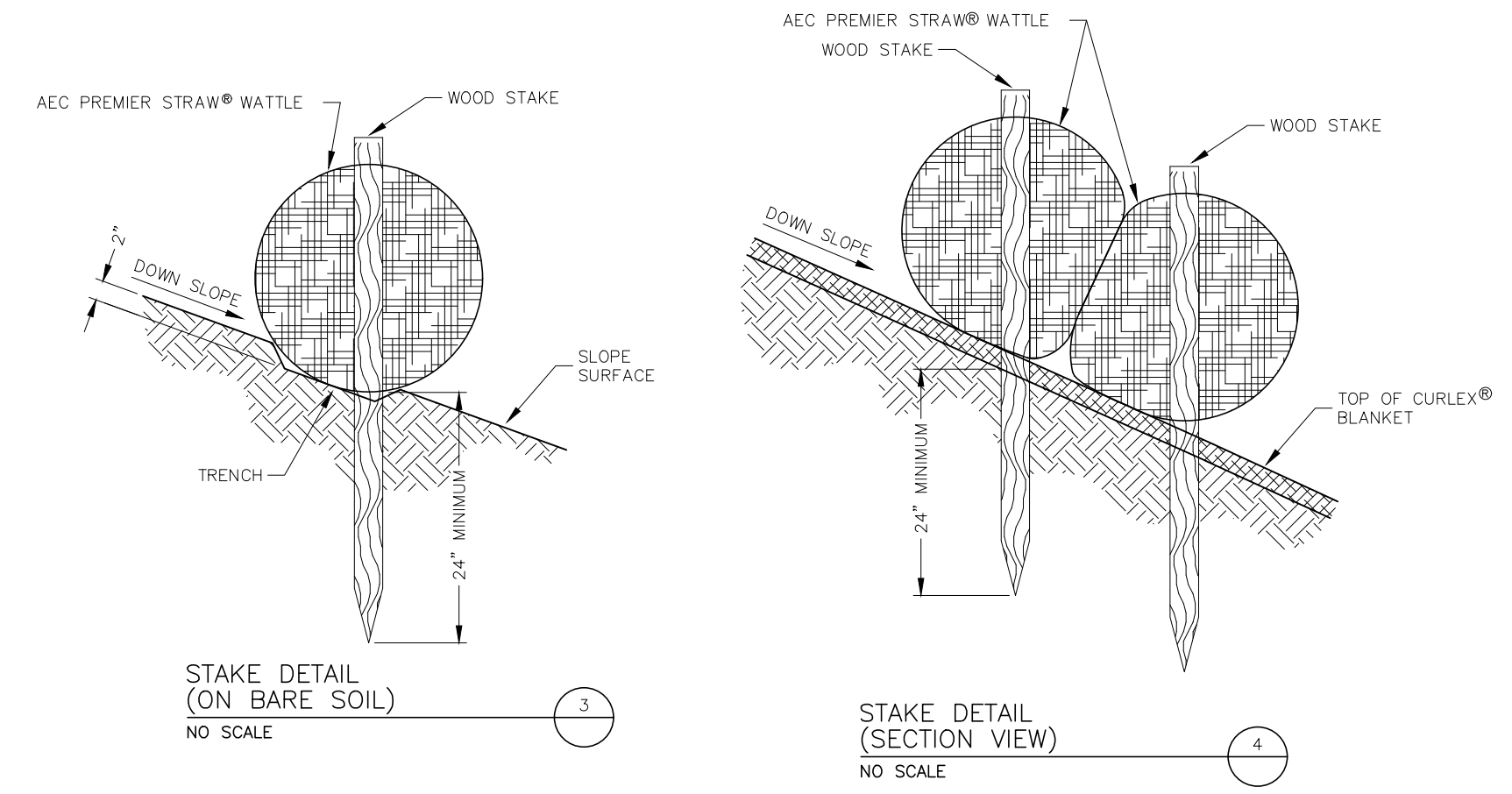
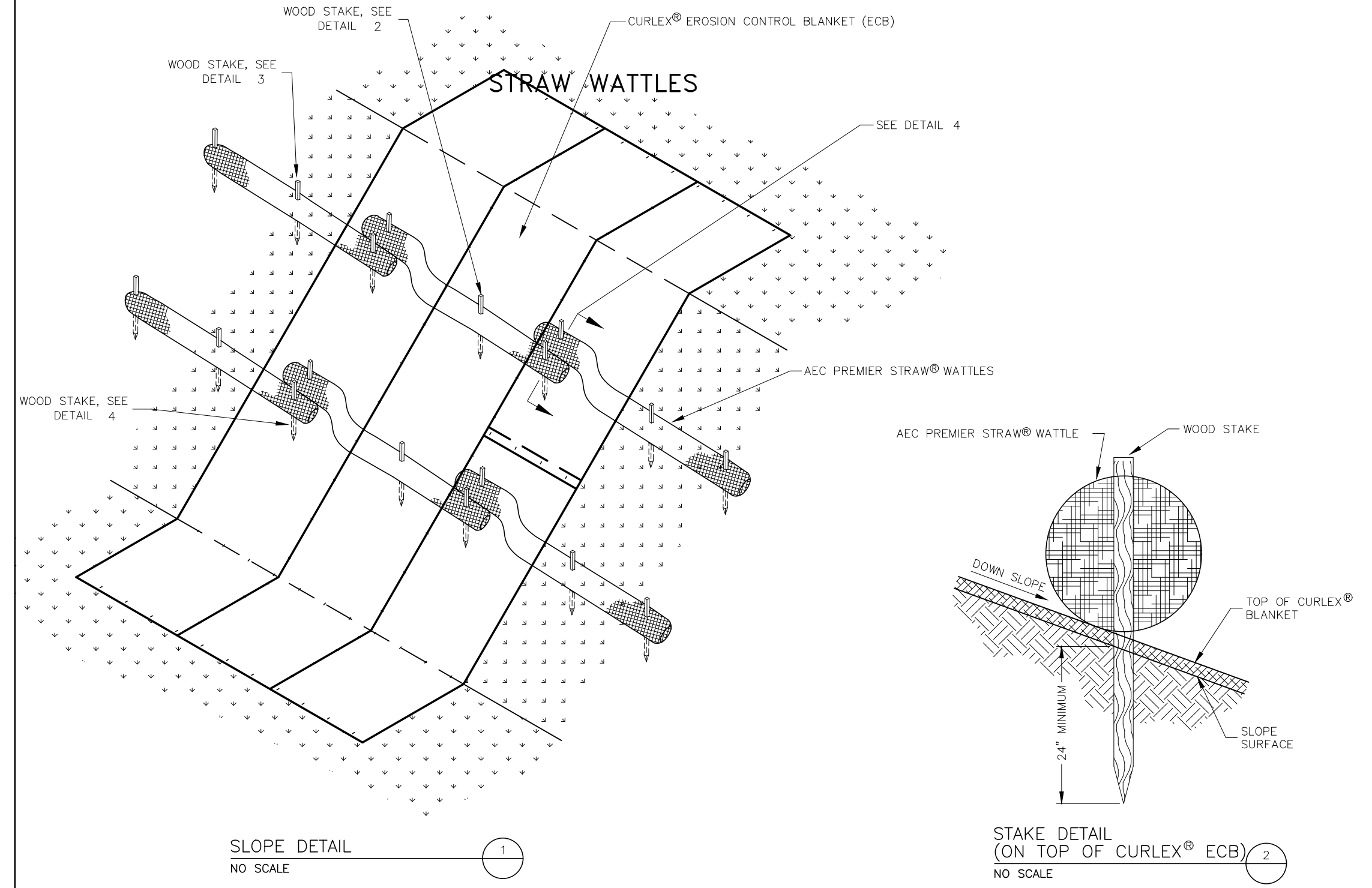


TYPICAL DETAILS FOR ROCK OUTLET PROTECTION

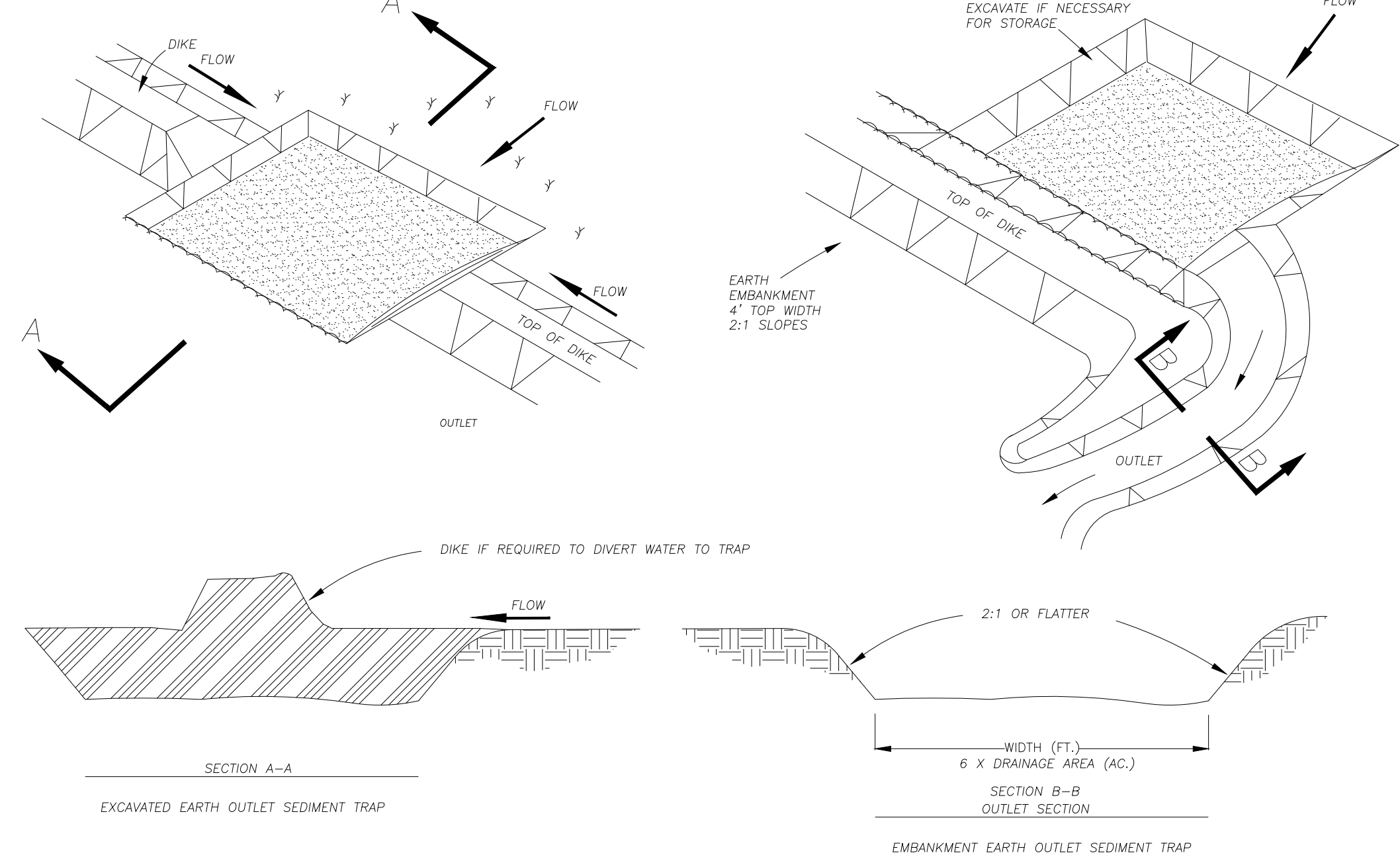


GENERAL NOTES:

1. THE EXIT VELOCITY OF THE RUNOFF AS IT LEAVES THE OUTLET PROTECTION STRUCTURE SHOULD BE REDUCED TO LEVELS THAT MINIMIZE EROSION.
2. OUTLET PROTECTION SHOULD BE INSPECTED ON A REGULAR SCHEDULE TO LOOK FOR EROSION AND SCOURING. REPAIRS SHOULD BE MADE PROMPTLY.
3. OUTLET PROTECTION SHOULD BE INSTALLED AT ALL PIPE, INTERCEPTOR DIKE, SWALE, OR CHANNEL SECTION OUTLETS WHERE THE VELOCITY OF FLOW MAY CAUSE EROSION AT THE PIPE OUTLET AND IN THE RECEIVING CHANNEL.
4. OUTLET PROTECTION SHOULD ALSO BE USED AT OUTLETS WHERE THE VELOCITY OF FLOW AT THE DESIGN CAPACITY MAY RESULT IN PLUNGE POOLS (SMALL PERMANENT POOLS LOCATED AT THE INLET TO OR THE OUTFALL FROM BMP'S).
5. OUTLET PROTECTION SHOULD BE INSTALLED EARLY DURING CONSTRUCTION ACTIVITIES, BUT MAY BE ADDED AT ANY TIME, AS NECESSARY.



EARTH OUTLET SEDIMENT BASIN\*



GENERAL NOTES:

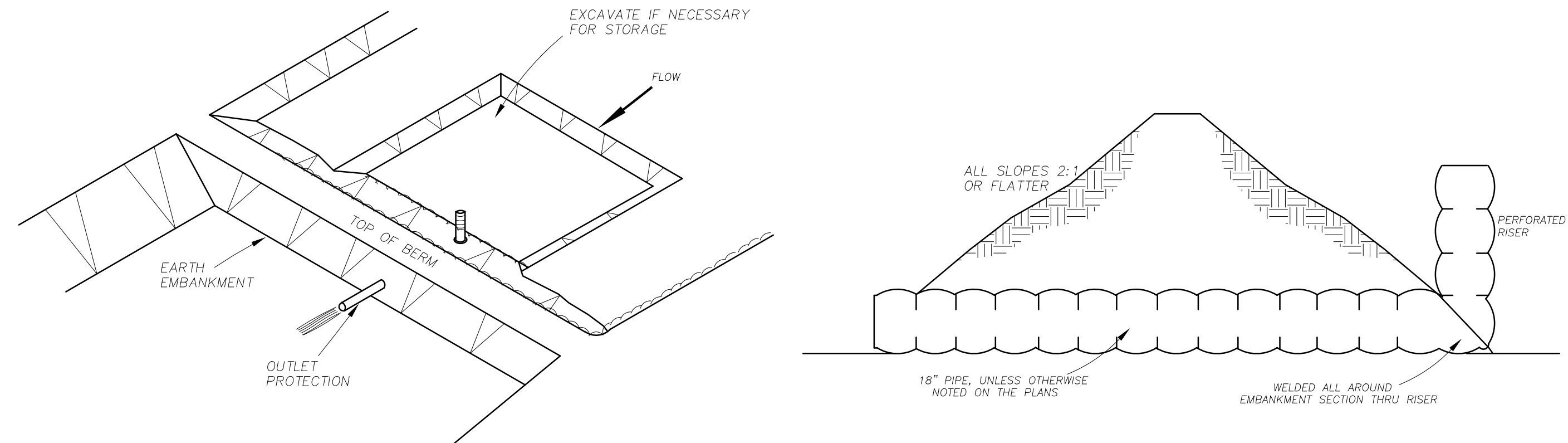
1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
  2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION, AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE MECHANICALLY COMPACTED DURING CONSTRUCTION.
  3. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP OR 1 FOOT, WHICHEVER IS LESS. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
  4. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED BY THE CONTRACTOR.
  5. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
  6. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
  7. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
  8. OUTLET CREST ELEVATION SHALL BE AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
- \*DRAINAGE AREA LESS THAN 5 ACRES.

STANDARD SYMBOL  
EST

GENERAL NOTES:

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION, AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP OR 1 FOOT, WHICHEVER IS LESS. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
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6. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
7. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
8. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.
9. AT LEAST THE TOP TWO-THIRDS OF THE RISER SHALL BE PERFORATED WITH 1/2 INCH DIAMETER HOLES SPACED 8 INCHES VERTICALLY AND 10-12 INCHES HORIZONTALLY.
10. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE COMPACTED IN 4 INCH LAYERS. A MINIMUM OF 2 FEET OF COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

PIPE OUTLET SEDIMENT BASIN



EROSION CONTROL DETAILS (EC1)

DESIGNED BY: RLB  
DATE: JANUARY 2023



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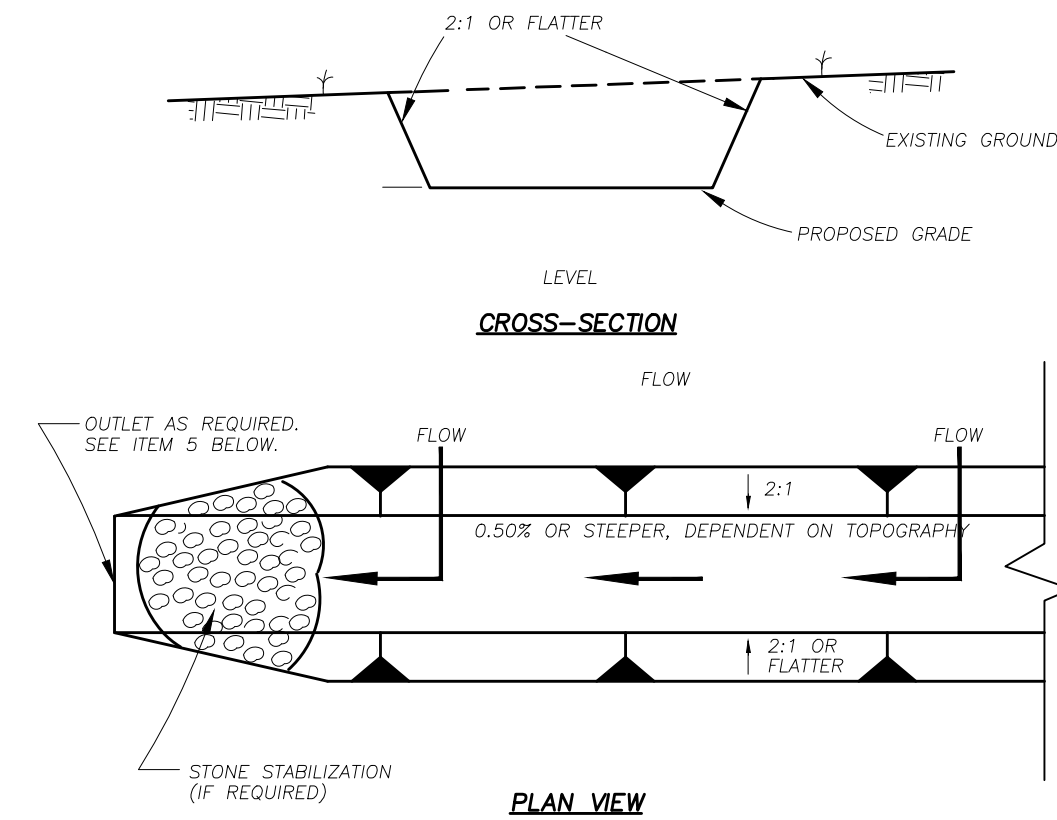
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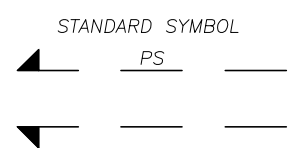
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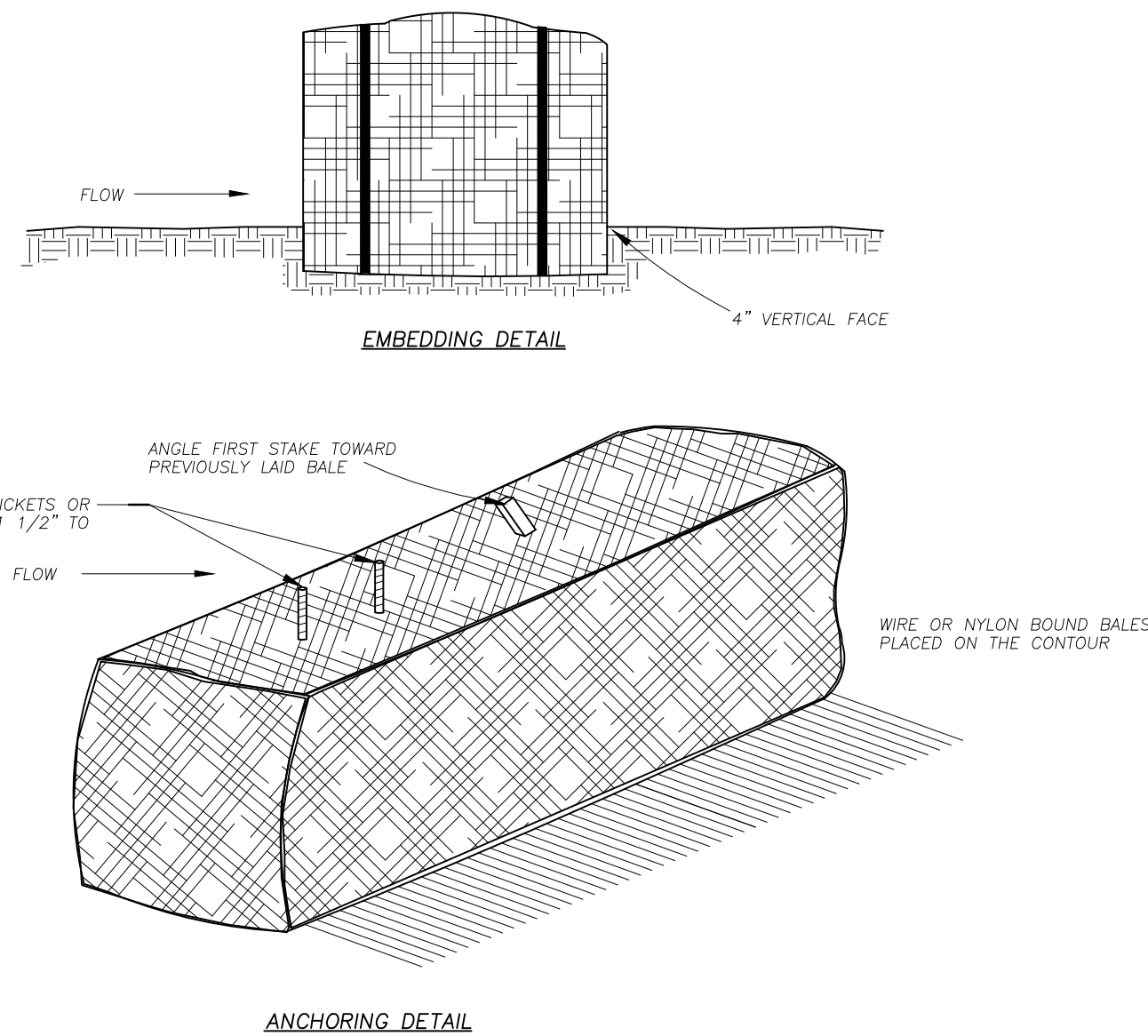
**PERIMETER SWALE\***  
(NOT TO SCALE)



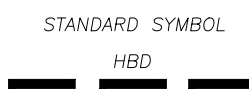
- GENERAL NOTES:**
- ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
  - THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS-SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
  - ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE DISPOSED OF IN AN APPROVED SPOILS SITE SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
  - PERIMETER SWALES SHALL HAVE A MINIMUM GRADE OF (0.50%) AND THE BOTTOM SHALL BE LEVEL.
  - DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED UPLAND AREA SHALL DISCHARGE DIRECTLY ONTO AN UNDISTURBED STABILIZED AREA, LEVEL SPREADER, OR INTO A GRADE STABILIZATION STRUCTURE.
    - DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED UPLAND AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE, SUCH AS A SEDIMENT TRAP OR A SEDIMENT BASIN OR WITHIN AN AREA PROTECTED BY ANY OF THESE PRACTICES.
    - STABILIZATION SHALL CONFORM TO TxDOT ITEM NO. 432.3(2)(C) "COMMON RIPRAP". THE RIPRAP SHALL BE PLACED IN A LAYER AT LEAST 3 INCHES IN-DEPTH EMBEDDED INTO THE SOIL. THE LINING SHALL EXTEND ACROSS THE BOTTOM AND UP BOTH SIDES OF THE CHANNEL TO A HEIGHT OF AT LEAST 8 INCHES VERTICALLY ABOVE THE BOTTOM.
  - PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PROVIDED BY CONTRACTOR. \*DRAINAGE AREA LESS THAN 5 ACRES.



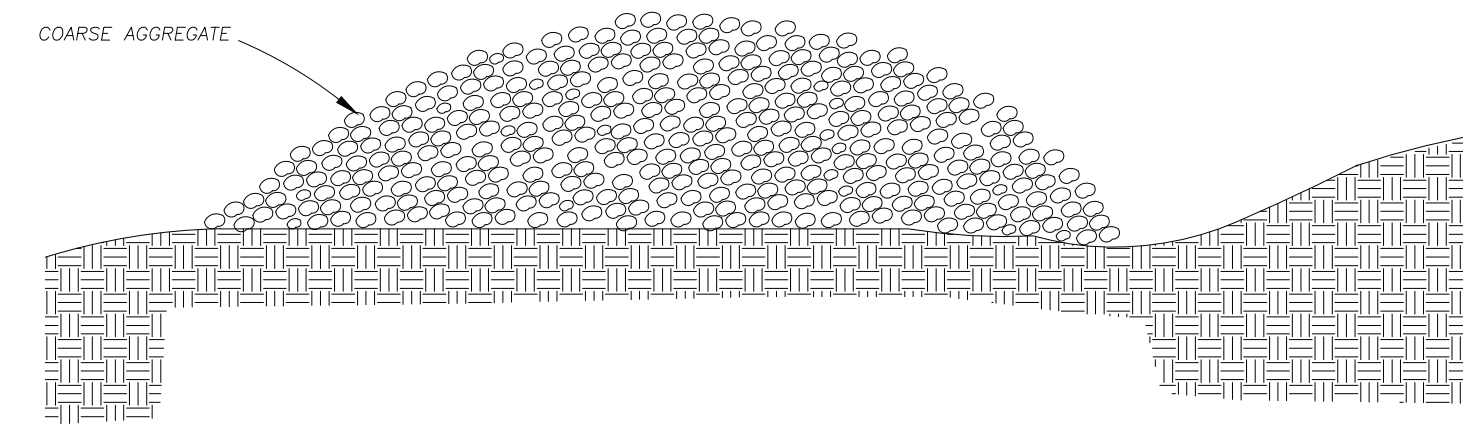
**HAY BALE DIKE\***



- GENERAL NOTES:**
- BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
  - EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR INCHES WHERE POSSIBLE.
  - BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
  - INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY CONTRACTOR.
  - BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
  - ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES.
- \*DRAINAGE AREA LESS THAN ONE-HALF ACRE.

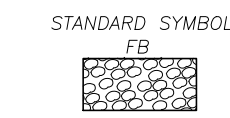


**TYPICAL GRAVEL FILTER BERM**

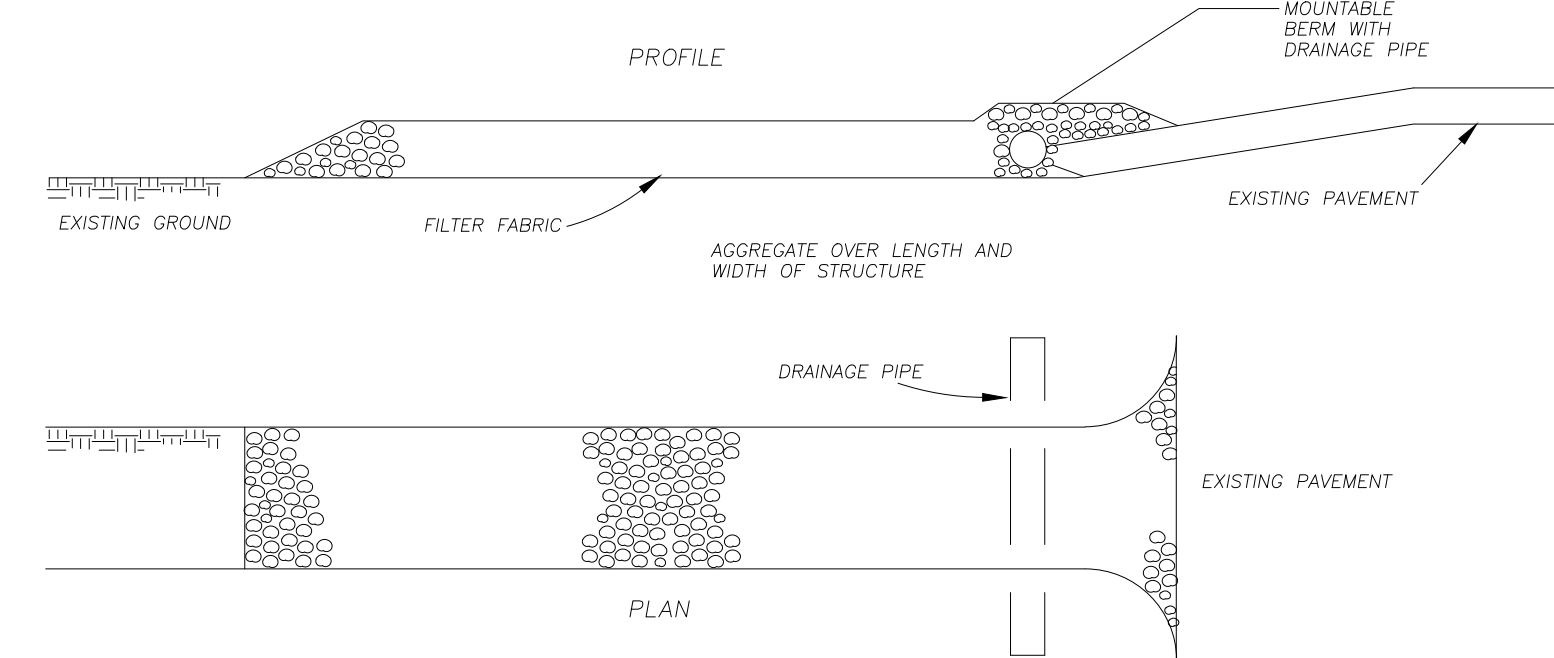


**GENERAL NOTES:**

- BERM MATERIAL SHOULD BE WELL GRADED GRAVEL OR CRUSHED ROCK. (TxDOT ITEM NO. 432.3(2)(C) )
- THE SPACING OF THE BERMS WILL DEPEND ON THE STEEPNESS OF THE SLOPE; BERMS SHOULD BE PLACED CLOSER TOGETHER AS THE SLOPE INCREASES.
- THE DIVERSION SHOULD BE INSPECTED REGULARLY AFTER EACH RAINFALL, OR IF BREACHED BY CONSTRUCTION OR OTHER VEHICLES.
- ALL REPAIRS SHOULD BE PERFORMED IMMEDIATELY.
- ACCUMULATED SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF AND THE FILTER MATERIAL REPLACED, AS NECESSARY.



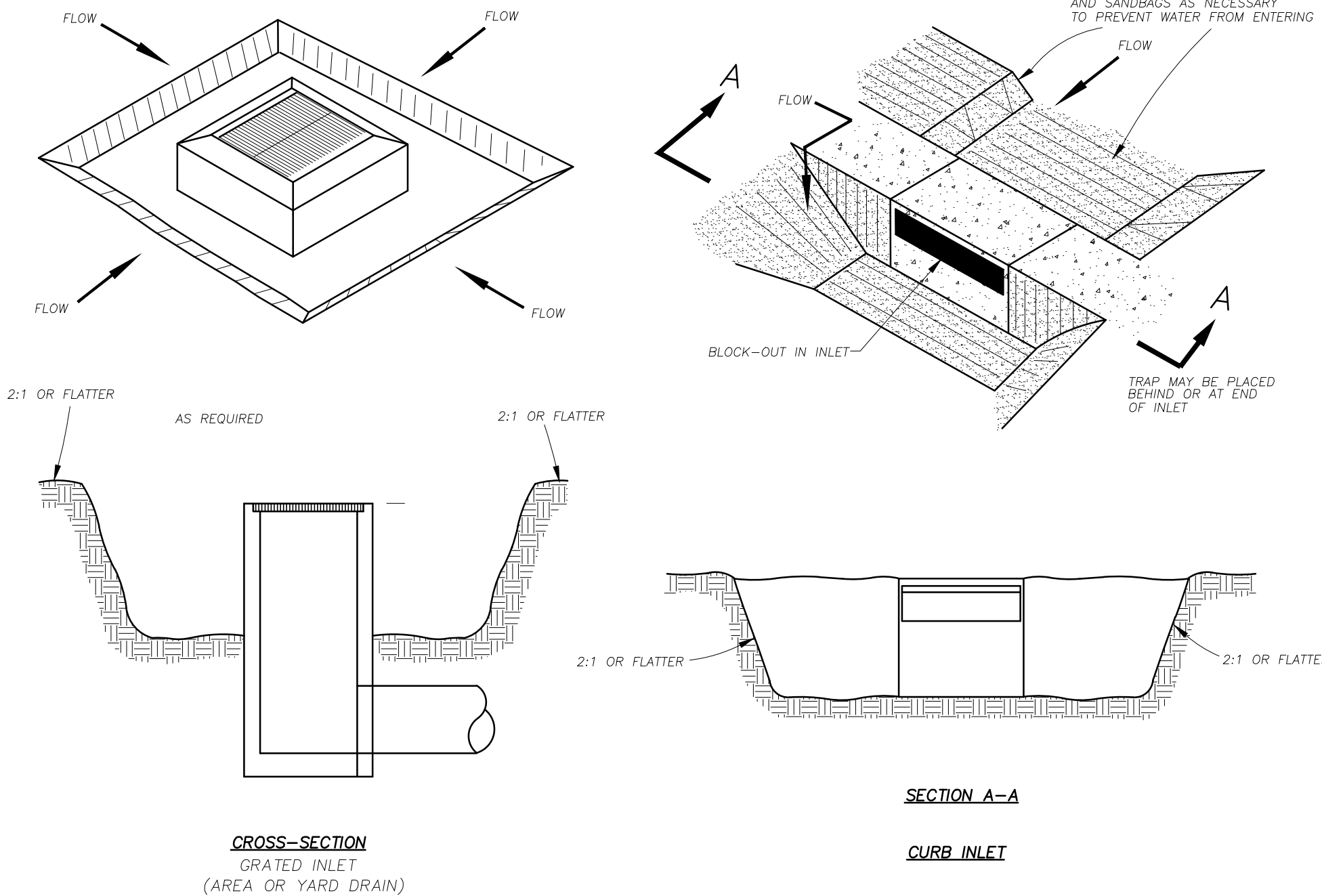
**STABILIZED CONSTRUCTION ENTRANCE**



**GENERAL NOTES:**

- STONE USED FOR THE CONSTRUCTION ENTRANCE SHOULD BE LARGE ENOUGH SO THAT IT DOES NOT GET PICKED UP AND TRACKED OFF OF THE SITE BY THE VEHICLE TRAFFIC. SHARP EDGED STONE SHOULD NOT BE USED TO AVOID PUNCTURING TIRES.
- IF VEHICLES WILL BE TURNING ONTO THE PAVED ROAD OR DRIVE FROM THE STABILIZED CONSTRUCTION ENTRANCE, THEN AN APRON SHOULD BE PROVIDED AS SHOWN ABOVE SO THAT VEHICLES DO NOT GO OFF OF THE STABILIZED CONSTRUCTION ENTRANCE BEFORE THEY LEAVE THE SITE.
- THE TEMPORARY CONSTRUCTION ENTRANCE MAY BE PROVIDED WITH A VEHICLE WASH RACK WHICH DRAINS TO A TEMPORARY SEDIMENT TRAP OR OTHER SEDIMENT REMOVING MEASURE. THIS WILL ALLOW VEHICLE TIRES TO BE WASHED PRIOR TO LEAVING THE SITE AND ENSURE THAT WASH WATER SEDIMENTS ARE REMOVED AND CAN BE PROPERLY DISPOSED OF.

**STORM INLET SEDIMENT TRAP\***



NOTE: WHERE CURB IS IN PLACE, PROVIDE A 1" WIDE OPENING IN THE CURB, OR USE A SANDBAG DAM TO FORCE WATER OVER THE CURB TO THE TRAP.

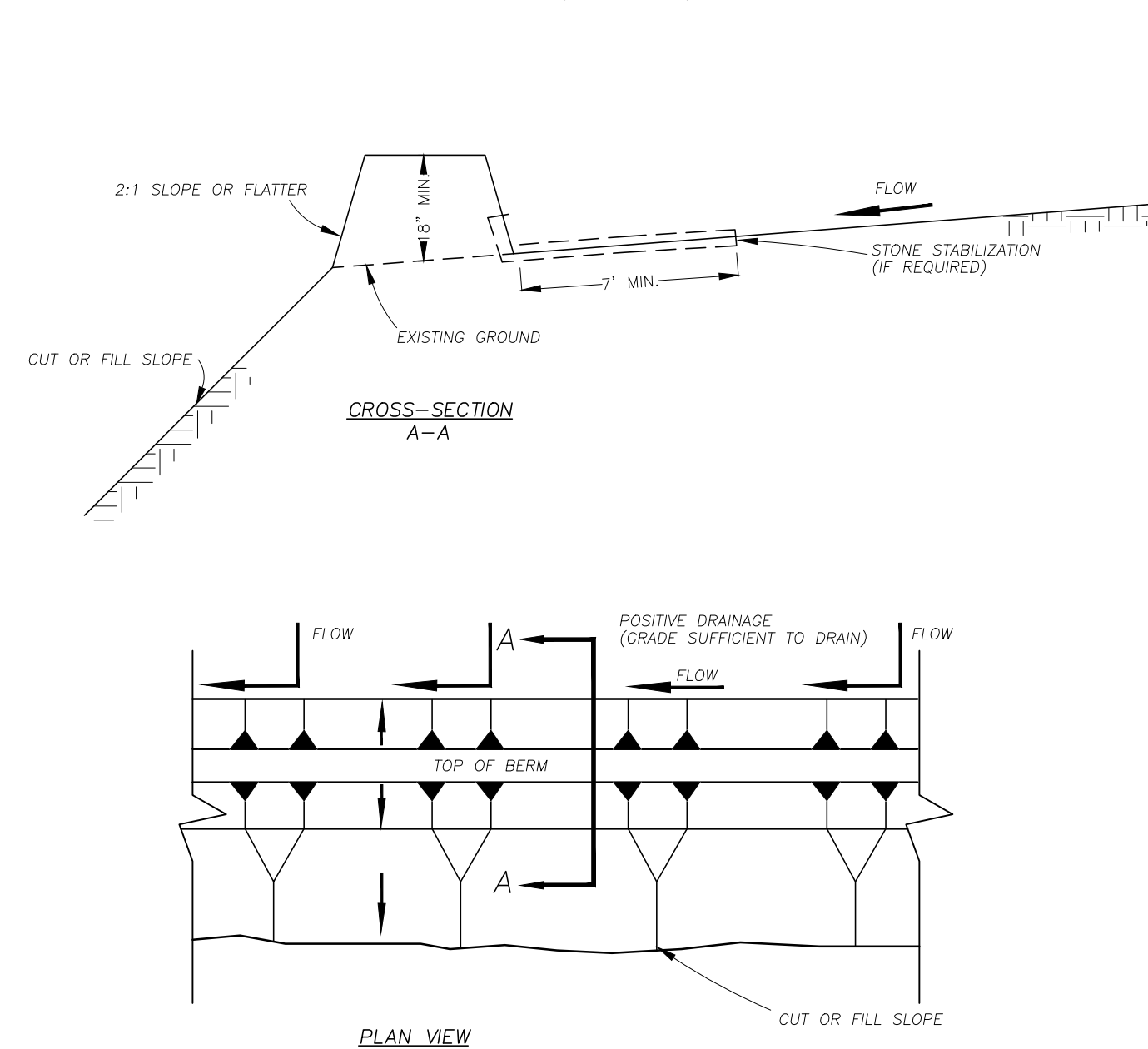
**GENERAL NOTES:**

- SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS NEEDED BY CONTRACTOR.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
- THE SEDIMENT TRAP SHALL BE REMOVED AND AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.

\*DRAINAGE AREA LESS THAN 5 ACRES.

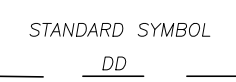


**DIVERSION DIKE\***  
(NOT TO SCALE)



- ALL DIKES SHALL BE MACHINE COMPACTED.
- ALL DIVERSION DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
- DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED AREA SHALL HAVE ITS OUTLET FLOW DIRECTED TO AN UNDISTURBED STABILIZED AREA OR INTO A LEVEL SPREADER OR GRADE STABILIZATION STRUCTURE.
  - DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE, SUCH AS A SEDIMENT TRAP OR A SEDIMENT BASIN OR TO AN AREA PROTECTED BY ANY OF THESE PRACTICES.
- UNLESS OTHERWISE SPECIFIED, STABILIZATION SHALL CONFORM TO THE REQUIREMENTS OF TxDOT ITEM NO. 432.3(2)(C) "COMMON RIPRAP". RIPRAP, WHEN USED SHALL BE PLACED IN A 3 INCH THICK LAYER AND EMBEDDED INTO THE SOIL.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PROVIDED BY THE CONTRACTOR.

\*DRAINAGE AREA LESS THAN 5 ACRES.



**GENERAL NOTES**

- TEMPORARY SEEDING FOR EROSION CONTROL. THE MATERIALS AND METHOD OF PLACEMENT SHALL BE IN ACCORDANCE WITH TEXAS STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION (TSDHPT) 2004 STANDARD SPECIFICATIONS ITEM NO. 164, "SEEDING FOR EROSION CONTROL" THESE INCLUDE BROADCAST SEEDING (DURING GROWING SEASON), STRAW OR HAY MULCH SEEDING, CELLULOSE FIBER MULCH SEEDING, ACCENT SEEDING, AND STRAW OR HAY MULCH.
- SOIL RETENTION BLANKET THE MATERIALS AND METHOD OF PLACEMENT SHALL BE IN ACCORDANCE WITH TSDHPT ITEM NO. 169, "SOIL RETENTION BLANKET" THESE INCLUDE WOOD FIBER MAT, NYLON MONOFILAMENT MAT, AND JUTE MESH.
- SCHEDULE OF WORK FOR EROSION CONTROL. TIMING OF THE SITE EROSION CONTROL SHALL BE AS FOLLOWS:
  - BEFORE THE LAND IS EVEN CLEARED OR GRADED, PLACE STRAW WATTLES AND SILT FENCES AS SHOWN ON THE CONSTRUCTION PLANS AT THE DOWNHILL PERIMETER OF THE AREA TO BE DISTURBED, AND CONSTRUCT SEDIMENT BASINS AS SHOWN ON THE PLANS AT THE POINTS WHERE WATERWAYS LEAVE THE DISTURBED SITE.
  - BEFORE ANY OTHER GRADING IS DONE, GRADE THE DIVERSION DIKES ON THE PERIMETER OF THE AREA TO BE GRADED, AND GRADE THE PERIMETER SWALES AS SHOWN ON THE CONSTRUCTION PLANS.
  - AS THE GRADING PROCEEDS, INSTALL THE INTERIOR DIVERSION DIKES, STRAW WATTLES, SILT FENCES, EARTH OUTLET, SEDIMENT TRAPS, PIPE OUTLET SEDIMENT TRAPS, SEDIMENT BASINS, AND OTHER ITEMS SHOWN ON THE CONSTRUCTION PLANS, IN THE INTERIOR OF THE DISTURBED AREA, TO PROTECT EXPOSED PORTIONS OF THE SITE AS GRADING IS COMPLETED.
  - AS THE STORM SEWER SYSTEM IS INSTALLED, GRADE THE STORM INLET SEDIMENT TRAPS AS SHOWN IN THE CONSTRUCTION PLANS.
  - MAINTAIN THE EROSION CONTROL FEATURES AFTER EACH RAIN OR AS NEEDED--REPAIR FENCES AND DIKES, GRADE SWALES, AND CLEAN SEDIMENT TRAPS AND BASINS SO THEY WILL FUNCTION AS INTENDED.
  - GRADED SURFACES LEFT EXPOSED 21 DAYS OR LONGER, OR INTENDED TO BE EXPOSED FOR OVER 21 DAYS, SHALL BE PROTECTED BY TEMPORARY SEEDING OR SOIL RETENTION BLANKET. STEEP SLOPES (OVER 5%) AND WATERWAYS SHALL BE PROTECTED BY SOIL RETENTION BLANKET, AND FLAT SLOPES PROTECTED BY SEEDING. THE SOIL RETENTION BLANKET OR SEEDING SHALL BE REPLACED OR RE-SEEDED AS NECESSARY AFTER RAINS UNTIL VEGETATION IS ESTABLISHED ON THE EXPOSED AREA.

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DESIGNED BY: RLB  
DATE: JANUARY 2023

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CIVIL ENGINEERS

THE C.T. BRANNON CORPORATION  
TX FIRM REGISTRATION #F-242  
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**CONSTRUCTION PLANS**  
FOR  
**LEOS LANDING SUBDIVISION IMPROVEMENTS**  
821 INVESTMENTS, LLC.  
CANEY CITY, HENDERSON COUNTY, TEXAS

NO.	DATE	REVISIONS	REMARKS

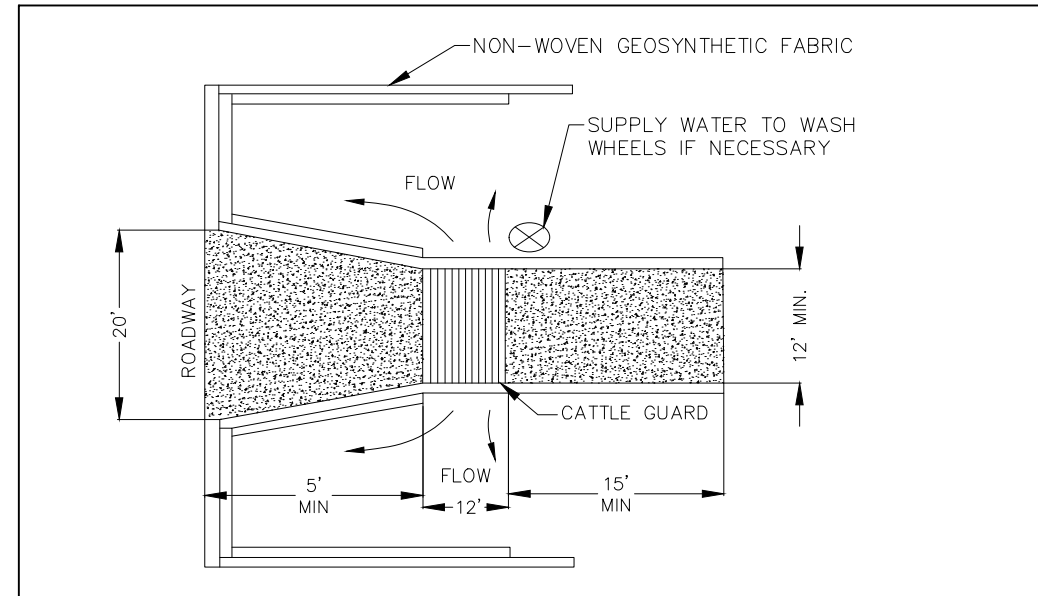
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FOR  
**REVIEW ONLY**

PROJECT NO. 22104  
SHEET NO.

**EROSION CONTROL DETAILS (EC2)**

22104-10-04-EC Details.dwg

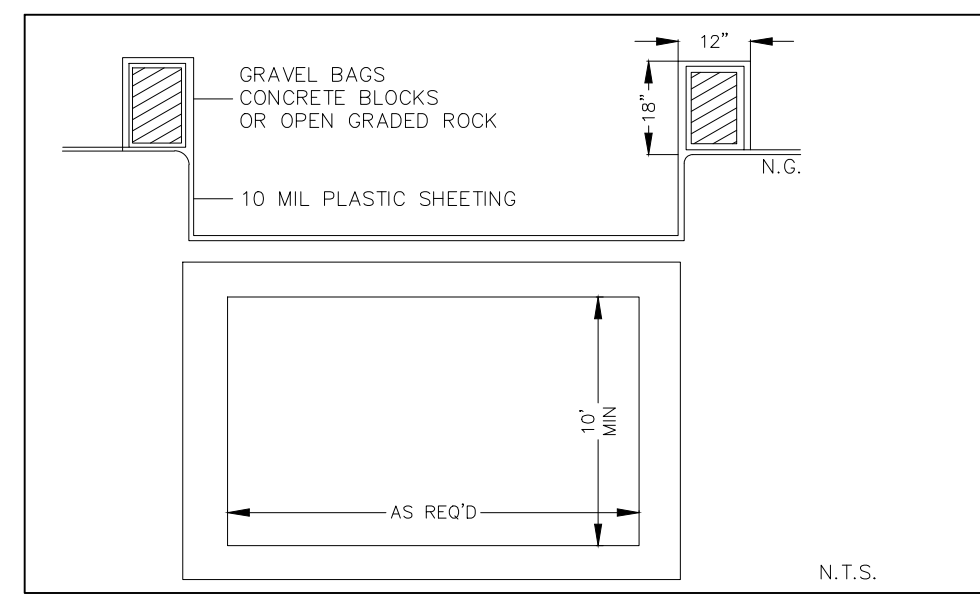
**STABILIZED CONSTRUCTION EXIT**



1. THE GRID CONSISTS OF PIPES OR TUBES WITH A MINIMUM DIAMETER OF 3 INCHES, AND SPACED SUCH THAT THERE IS A MINIMUM CLEAR DISTANCE OF 4.5 INCHES BETWEEN THEM. ELEVATE THE GRID ABOVE THE GROUND SURFACE A MINIMUM OF 8 INCHES TO ALLOW WATER, DEBRIS, AND SOIL TO DRAIN.
2. THE GRID SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF ANY AND ALL VEHICLES ENTERING AND LEAVING THE CONSTRUCTION SITE.
3. THE GRID SHALL BE FIRMLY PLACED IN THE GROUND AT THE EXIT, AND SHALL BE OF SUFFICIENT LENGTH THAT THE AGITATION WILL REMOVE THE SOIL FROM THE TIRES, OR A MINIMUM OF 8 FEET.
4. AT THE STREET SIDE APPROACH OF THE GRID, THERE SHALL BE AN IMPERVIOUS SURFACE OR IT SHALL CONSIST OF 3" x 5" ANGULAR CRUSHED STONE/ROCK 5 FEET IN LENGTH MINIMUM, AND 8 INCHES DEEP, MINIMUM. ON THE JOB SITE SIDE OF THE GRID, THERE SHALL BE 3" x 5" ANGULAR CRUSHED STONE/ROCK 15 FEET IN LENGTH, MINIMUM, 8 INCHES DEEP, MINIMUM. THE STEEL GRID WILL BE BETWEEN THE STREET SIDE APPROACH AND THE JOB SITE CRUSHED STONE/ROCK. ALL CRUSHED STONE/ROCK SHALL HAVE FILTER FABRIC PLACED BENEATH IT.
5. THE STEEL GRID AREA SHALL BE USED AS THE TIRE WASH AREA. WHEN TIRE WASH IS IN USE (RAINY OR MUDDY DAYS), THE AREA SHALL BE MANNED AND THE TIRES SHALL BE WASHED USING A HIGH PRESSURE HOSE/NOZZLE.
6. THE AREA BENEATH THE GRID SHALL BE SLOPED SUCH THAT DEBRIS, SOIL, AND WATER SHALL BE DIVERTED BACK ON TO THE CONSTRUCTION SITE OR TO A SEDIMENT BASIN. NO WATER, SOIL, OR DEBRIS SHALL LEAVE THE CONSTRUCTION SITE, AND THE RESULTING DISCHARGE SHALL BE DISPOSED OF PROPERLY.

08/01/13 Issuance Section 01 57 23 Page 24 of 25  
07/26/13 Revision

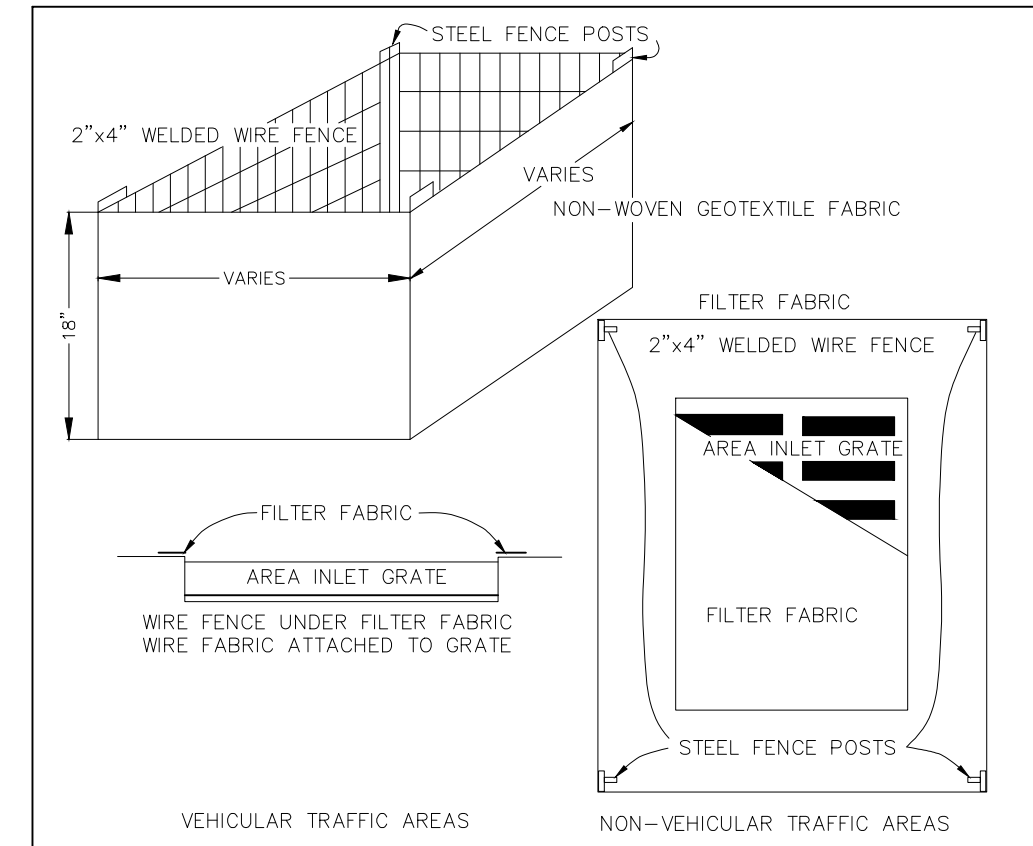
**CONCRETE TRUCK WASHOUT**



1. THE EXCAVATION FOR THE CONCRETE TRUCK WASHOUT SHALL BE A MINIMUM OF 10 FEET WIDE AND OF SUFFICIENT LENGTH AND DEPTH TO ACCOMMODATE 7 GALLONS OF WASHOUT WATER AND CONCRETE PER TRUCK PER DAY AND/OR 50 GALLONS OF WASHOUT WATER AND CONCRETE PER PUMP TRUCK PER DAY.
2. IN THE EVENT THAT THE CONCRETE TRUCK WASHOUT IS CONSTRUCTION ABOVE GROUND, IT SHALL BE 10 FEET WIDE AND 10 FEET LONG, WITH THE SAME REQUIREMENTS FOR CONTAINMENT AS DESCRIBED IN ITEM 1.
3. THE CONTAINMENT AREA SHALL BE LINED WITH 10 MIL PLASTIC SHEETING WITHOUT HOLES OR TEARS. WHERE THERE ARE SEAMS, THESE SHALL BE SECURED ACCORDING TO MANUFACTURER'S DIRECTIONS.
4. THE BERM CONSISTING OF GRAVEL BAGS, CONCRETE BLOCKS OR OPEN GRADED ROCK SHALL BE NO LESS THAN 18 INCHES HIGH AND NO LESS THAN 12 INCHES WIDE.
5. THE PLASTIC SHEETING SHALL BE OF SUFFICIENT SIZE TO THAT IT WILL OVERLAP THE TOP OF THE CONTAINMENT AREA AND BE WRAPPED AROUND THE GRAVEL BAGS, CONCRETE BLOCKS OR OPEN GRADED ROCK AT LEAST 2 TIMES.
6. THE GRAVEL BAGS OR CONCRETE BLOCKS SHALL BE PLACED ABUTTING EACH OTHER TO FORM A CONTINUOUS BERM AROUND THE OUTER PERIMETER OF THE CONTAINMENT AREA.
7. THE WASHOUT MATERIAL IN THE CONTAINMENT AREA SHALL NOT EXCEED 50% OF CAPACITY AT ANY ONE TIME.
8. SOLIDS SHALL BE REMOVED FROM CONTAINMENT AREA AND DISPOSED OF PROPERLY. ANY DAMAGE TO THE PLASTIC SHEETING SHALL BE REPAIRED OR SHEETING REPLACED BEFORE THE NEXT USE.

08/01/13 Issuance Section 01 57 23 Page 25 of 25  
07/26/13 Revision

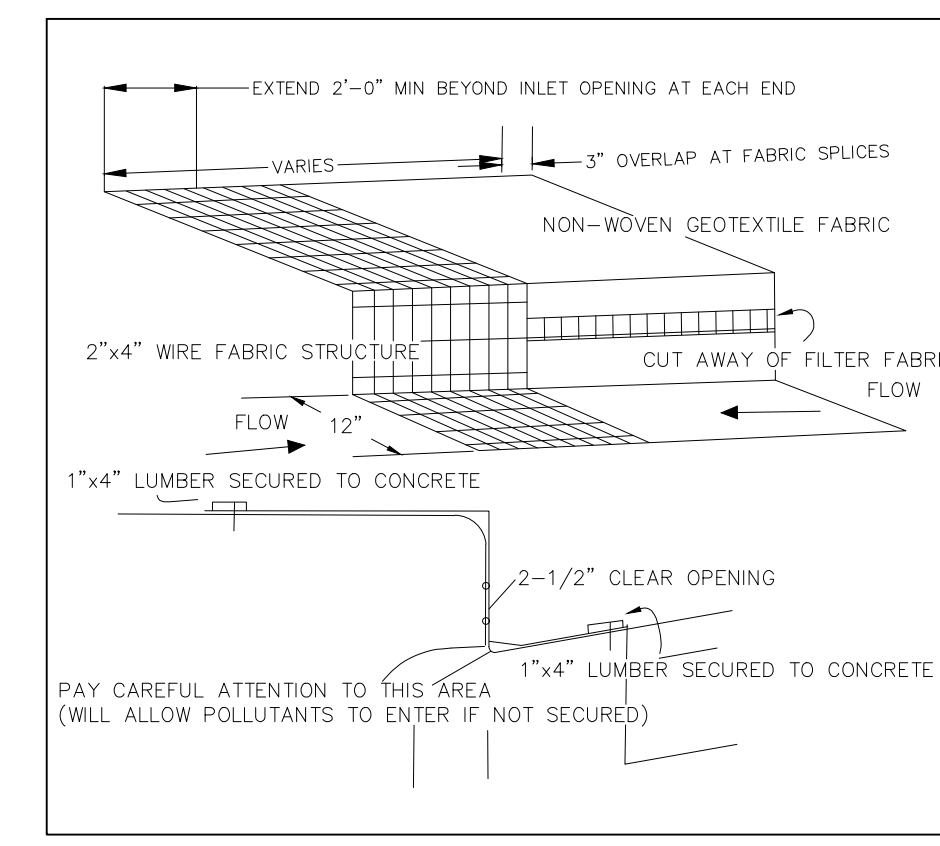
**AREA INLET DETAIL**



1. INSTALL STEEL POSTS THAT SUPPORT THE SILT FENCE AT EACH CORNER, AND ALSO BETWEEN CORNERS IF THE DISTANCE IS GREATER THAN 6 FEET BETWEEN CORNER POSTS.
2. USE SILT FENCE DETAIL FOR INSTALLATION OF THE SILT FENCE AROUND THE AREA INLET.
3. LIFT THE METAL AREA INLET GRATE, WRAP THE FILTER FABRIC AROUND IT, AND THEN REPLACE THE GRATE.
4. IN VEHICULAR TRAFFIC AREAS, LIFT THE METAL GRATE OUT AND PLACE WIRE FENCE MATERIAL UNDER IT WITH FILTER FABRIC PLACED BETWEEN THE GRATE AND THE WIRE FENCE. THEN ATTACH THE WIRE FENCE TO THE GRATE.
5. REMOVE ACCUMULATED SILT WHEN THE FILTER FABRIC OVER THE GRATE COMPLETELY COVERS THE GRATE AREA AND THE SILT AROUND THE SILT FENCE REACHES A HEIGHT OF 6 INCHES.
6. REMOVE AREA INLET PROTECTION WHEN THE SITE IS COMPLETELY STABILIZED.

08/01/13 Issuance Section 01 57 23 Page 19 of 25  
07/26/13 Revision

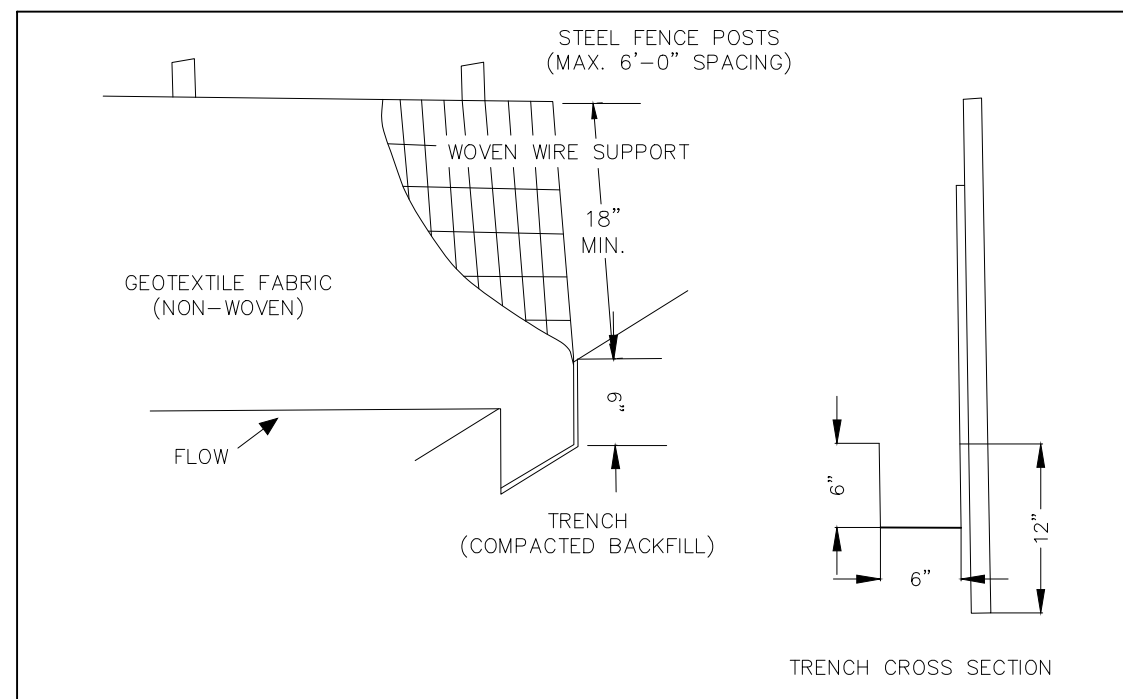
**CURB INLET DETAIL**



1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, USE 1"x4" LUMBER SECURED WITH CONCRETE NAILS 3 FEET ON CENTER NAILED INTO THE CONCRETE. IF THERE IS PEDESTRIAN TRAFFIC ONLY, THE USE OF #20 GRAVEL BAGS TO SECURE MATERIAL IS PERMITTED.
2. REMOVE SECTION OF FILTER FABRIC AS SHOWN IN THIS DETAIL. SECURE FABRIC TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. INSPECT DAILY AND REMOVE SILT ACCUMULATION WHEN THE DEPTH REACHES 2 INCHES.
4. MONITOR THE PERFORMANCE OF THE INLET PROTECTION DURING EACH RAINFALL EVENT AND REMOVE PROTECTION IMMEDIATELY IF THE STORM WATER BEGINS TO OVERTOP THE CURB.
5. REMOVE ACCUMULATED SILT WHEN THE FILTER FABRIC OVER THE GRATE COMPLETELY COVERS THE GRATE AREA AND THE SILT AROUND THE SILT FENCE REACHES A HEIGHT OF 6 INCHES.
6. REMOVE INLET PROTECTION AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

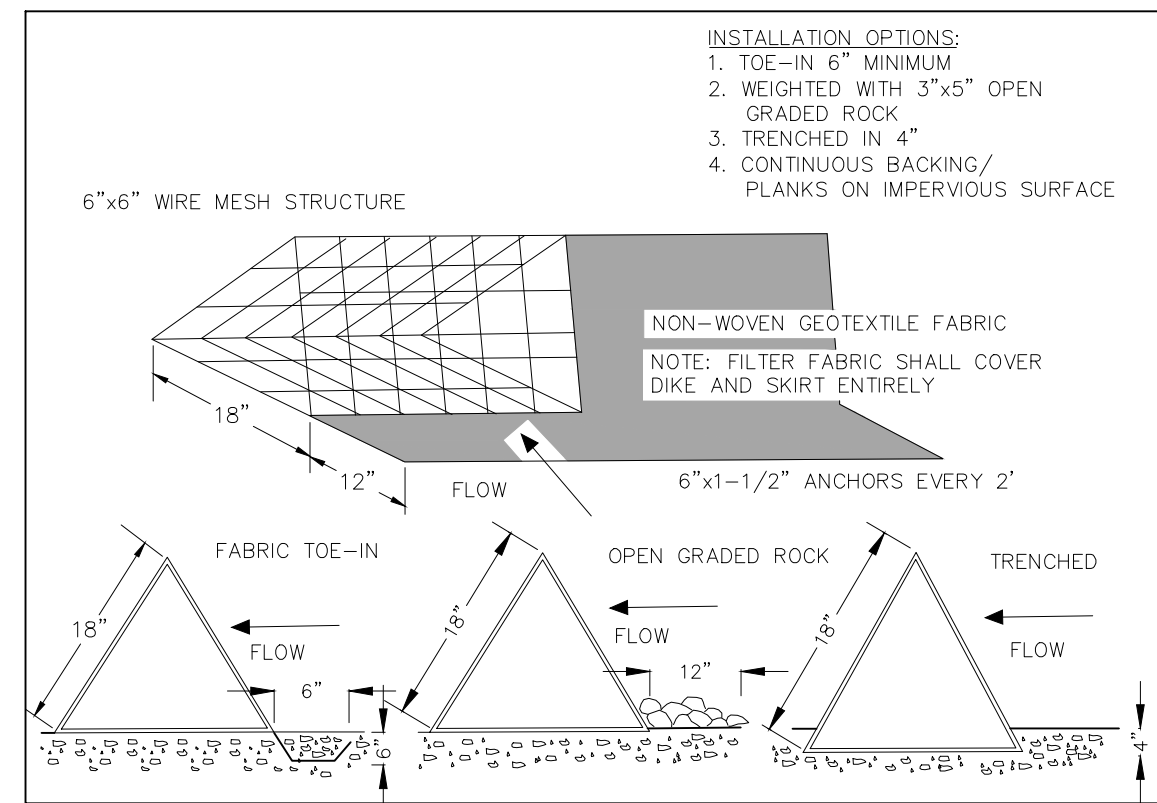
08/01/13 Issuance Section 01 57 23 Page 20 of 25  
07/26/13 Revision

**SILT FENCE DETAIL**



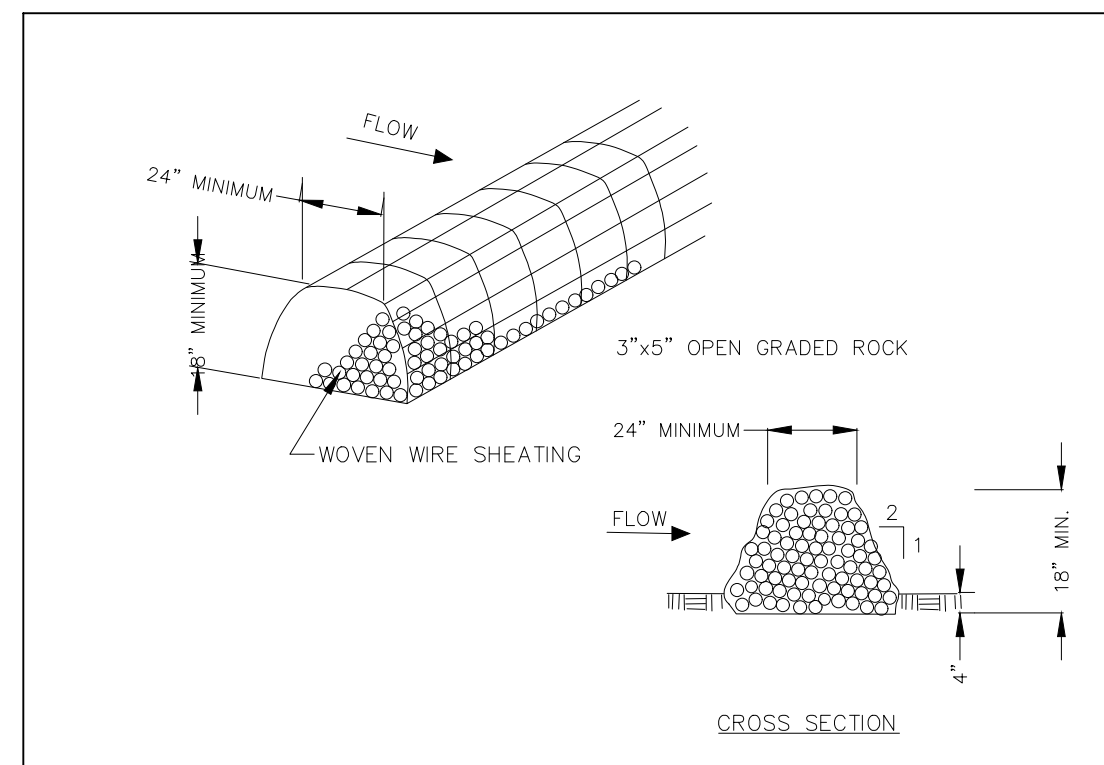
1. INSTALL STEEL POSTS THAT SUPPORT THE SILT FENCE ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 12 INCHES.
2. TRENCH IN THE TOE OF THE SILT FENCE WITH A SPADE OR MECHANICAL TRENCHER SO THAT THE DOWN SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF THE FLOW. WHERE FENCE CAN NOT BE TRENCHED INTO THE SURFACE, (E.G. PAVEMENT), WEIGHT THE FABRIC DOWN WITH ROCK OR 1"x4" LUMBER SECURELY FASTENED TO THE SURFACE. PLACE ON THE UPSTREAM SIDE TO PREVENT FLOW UNDER THE FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE FILTER FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. FASTEN THE FILTER FABRIC SECURELY TO THE WOVEN WIRE BACKING, AND IN TURN, FASTEN IT SECURELY TO THE STEEL FENCE POST.
5. REMOVE ACCUMULATED SILT WHEN IT REACHES A DEPTH OF 6 INCHES, DISPOSE OF THE SILT ON AN APPROVED SITE AND IN SUCH A MANNER THAT IT WILL NOT CONTRIBUTE TO ADDITIONAL SILTRATION.
6. INSPECT THE SILT FENCE WEEKLY AND REPAIR OR REPLACE PROMPTLY IF NEEDED.
7. WHEN THE SITE IS COMPLETELY STABILIZED, REMOVE THE SILT FENCE.

**TRIANGULAR DIKE DETAIL**



1. PLACE DIKES IN A ROW WITH EACH END TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF NON-WOVEN GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. WEIGHT THE SKIRT WITH A CONTINUOUS LAYER OF 3"x5" OPEN GRADED ROCK, 1"x4" SECURELY FASTENED LUMBER, OR TOED-IN 6 INCHES WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, TRENCH IT IN 4 INCHES OF DEPTH.
4. ANCHOR DIKES AND SKIRT SECURELY IN PLACE USING 6 INCH WIRE STAPLES ON 2 FOOT CENTERS ON BOTH EDGES OF SKIRT, OR STAKE USING 3/8 INCH REBAR WITH TEE ENDS.
5. LAP FILTER MATERIAL OVER ENDS 6 INCHES TO COVER DIKE TO DIKE JOINTS. FASTEN JOINTS WITH GALVANIZED HOG RINGS.
6. THE DIKE STRUCTURE SHALL BE 6-GUAGE 6"x6" WIRE MESH, 18 INCHES ON A SIDE.
7. REMOVE ACCUMULATED SILT WHEN IT REACHES A DEPTH OF 6 INCHES, AND DISPOSE OF IT IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTRATION.
8. INSPECT TRI-DIKES WEEKLY AND REPAIR OR REPLACE PROMPTLY AS NEEDED.
9. AFTER THE SITE IS COMPLETELY STABILIZED, REMOVE THE DIKES AND ANY REMAINING SILT.

**ROCK BERM DETAIL**



1. USE ONLY OPEN GRADED 4"x8" ROCK FOR STREAM FLOW CONDITIONS. USE 3"x5" OPEN GRADED ROCK FOR OTHER CONDITIONS.
2. SECURE THE ROCK BERM WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM 1 INCH OPENING AND A MINIMUM 20-GUAGE WIRE DIAMETER. ANCHOR ROCK BERMS IN CHANNEL APPLICATIONS FIRMLY INTO THE SUBSTRATE A MINIMUM OF 6 INCHES WITH TEE POSTS OR WITH #5 OR #6 REBAR WITH A MAXIMUM SPACING OF 48 INCHES ON CENTER.
3. INSPECT THE ROCK BERM WEEKLY. REPLACE THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC, ETC...
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 6 INCHES, WHICHEVER IS LESS, REMOVE THE SILT AND DISPOSE OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SILTRATION PROBLEM.
5. INSPECT SEVERE SERVICE ROCK BERMS DAILY, AND REMOVE SILT WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN THE SITE IS COMPLETELY STABILIZED, REMOVE THE ROCK BERM AND ACCUMULATED SILT AND DISPOSE OF IN AN APPROVED MANNER.

**Polymer Enhanced BMP Application Guide**

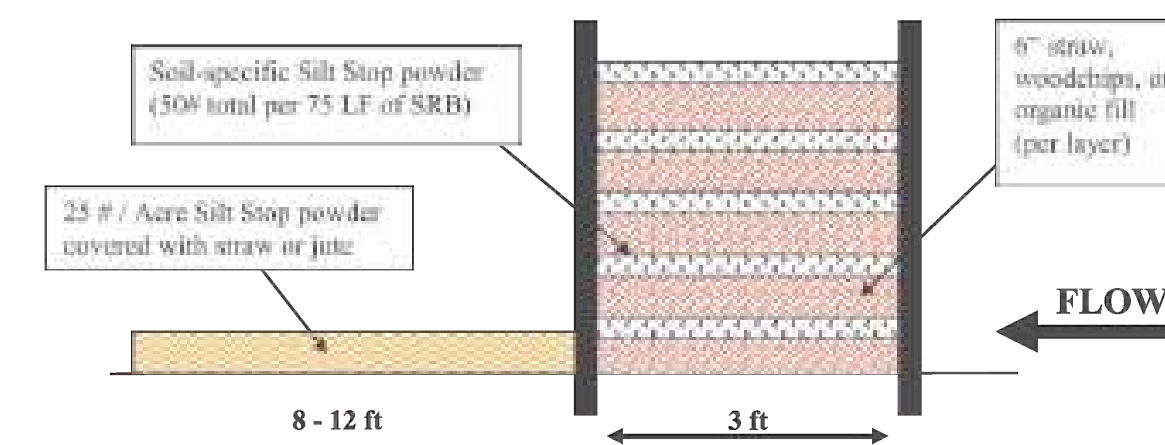
**Sediment Control**

**Sediment Retention Barriers (SRB)**

The Sediment Retention Barrier (SRB) is a double row of silt fence, standing about 4-6 feet apart, filled with loose mulch, straw, woodchips, or other organic matter mixed or blended with the site-specific Silt Stop polymer. It is used on graded sites to trap the fine sediment and clays that flow through the silt fence barrier. With the use of the site-specific Silt Stop polymer, stormwater clarity can be greatly improved while utilizing the function of the silt fence.

1. Install in areas where stormwater will exit a site, keeping the installation as level as possible; fill low spots as necessary.
2. Place the barrier perpendicular to flow.
3. The silt fence should be designed to allow water to pass through it. The silt fence shall allow water to pass at a rate of 70 GPM/ft<sup>2</sup> or greater.
4. Place 2 parallel rows silt fence 4-6 feet apart. Place loose straw or mulch 3 feet deep between the silt fences (do not compact).
5. Dry site-specific Silt Stop powder should be spread throughout the organic fill material, mixed evenly or spread in small layers. **Application rates should be around 50# powder / 75 linear feet of SRB.**
6. Stabilizing the soil behind the SRB with Silt Stop powder and straw or jute matting provides final clarification of the stormwater. It should be used where water clarity is extremely important.

**Cross section of a Sediment Retention Barrier:**



DESIGNED BY: RLB  
DATE: JANUARY 2023  
PRELIMINARY  
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PROJECT NO. 22104  
SHEET NO. **C-10.06**

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